

ological
Medical
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25
THE

AMERICAN

JOURNAL OF OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN.

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VOLUME XII.

JANUARY, APRIL, JULY, OCTOBER, 1879.

New York :

WILLIAM WOOD & CO., PUBLISHERS,

27 GREAT JONES STREET.

57468
6/1/86

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THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XII.] JANUARY, 1879. [No. 1.

ORIGINAL COMMUNICATIONS.

POST-MORTEM DELIVERY.

BY

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(With table.)

THE problems involved in the death of a pregnant woman, whose child is viable, have commanded to a greater or lesser extent the attention alike of the medical profession, the state, and the Church for many centuries; the literature of the subject dating back to at least 800 B.C. It is, indeed, curious to note how much discussion its various relations have excited, and in view of this fact it is certainly remarkable that no definite conclusions, binding as of authority, seem to have been reached; no recognition of responsibility as attaching to him who permits a child to die in its dead mother's womb without an effort to save it. It is the purpose of this paper to pass in review somewhat of the literature of the subject, and to consider the duty of an obstetrician when confronted, as he is at any time liable to be, with the necessity for prompt decision and action in such a case.

At a meeting of the Philadelphia Obstetrical Society, June 3d, 1875, Dr. Jos. V. Kelly related an interesting history of the delivery of a living child from a dead mother. The discussion which followed demonstrated that even obstetric spe-

cialists were not prepared to announce any operative procedure as *obligatory* upon the physician.

In an able paper of so recent date as 1861, by Dr. Schwarz, Medicinalrath¹ in Fulda,² the following remarkable passage occurs: "If a man is fortunate enough to obtain a living child by the Cesarean operation on a dead mother, he places himself in the unfortunate position of being suspected of having operated on a woman in a trance, or he burdens his conscience with having waited so long for the death of the mother that he has allowed the child to die." Dr. Schwarz quotes from the records of his own duchy 107 cases, all having occurred in Kurhessen between the years 1836 and 1848, out of 336,941 births, and "not one living child was extracted." He quotes also in support of his position the assertion of Scanzoni that "the fetus in utero is the same as any other internal organ of the woman," and that, "if we recognize the instant of the death of the mother, when all organic expression is gone, and organic laws yield to chemical laws, that instant we must recognize also the death of the child."

Similar opinions constantly find expression in the recorded reports of pregnant women dying at term, without mention of any operative procedure to save the children, and in an unpublished lecture by a distinguished obstetric teacher of this city, it was argued that it was utterly futile to attempt any post-mortem measures having for their object the saving of the life of the fetus.

These modern utterances are in striking contrast to the convictions which have been entertained by various peoples for many centuries. With the exception of the Chinese, the Jews, and the Egyptians, all the older nations had laws more or less stringent on this subject, and which doubtless reflected, to a considerable extent, the medical sentiment of their times. The old Roman law forbade to "bury pregnant women before the fruit be taken from their bodies," and disobedience to this mandate was considered as affording grounds for a "legal suspicion that a living child had been killed."

In 1749, Charles, King of the Sicilies, commanded that all physicians who should neglect to perform the Cesarean section on a woman dying pregnant should be arraigned for murder.

¹ A kind of public medical recorder and adviser.

² Monatschrift für Geburtskunde, vol. xviii., supplement.

In the *Carolina Journal* for 1820, in "An Essay on the Causes Demanding the Cesarean Section," by W. Michel, M.D., the author, besides enumerating many mythological records of the operation, mentions the historical examples of Scipio Africanus, of Manlius Torquatus, of the Roman army; of the Consul Caius Fabius, and the doubtful one of Cesar, all having been rescued after the death of their mothers. The world is also indebted to post-mortem Cesarean sections for the lives of the philosophers Gorgias and Hermes Trismegistus. It is not, therefore, surprising that Numa Pompilius, with any one of these illustrious examples before him, should have issued an edict¹ commanding physicians to "open the bodies of dead pregnant women, with the hope of preserving citizens to the State." The same law existed in Venice,² from 1608 to 1722, and in 1740 the Council of Ulm not only prescribed the law, but the formalities of its execution, and directed that the "stupid parent" be informed "that if he omitted any possible means of saving the life of his child," he "put upon his conscience," but "could not be compelled to submit."

In the first half of the last century, Pope Benedict XIV. issued "Church directions" for the operation, and so tempered his commands as to require the measure only "in case the child be living, and in order to receive the holy ordinance of baptism."

Dr. Schwarz' essay presents also the record of the Austrian law of 1757, that "the operation shall be carried out with the same care as if the woman be living," and the Theresian law of 1768—"if a pregnant woman commits suicide, open the body as much as necessary only, that the child shall not be deprived of a holy Christian burial." Thus "Christianity seems to have given fresh importance to this subject, by giving new value to the life of the child." The requirements of the laws of various other countries are also quoted, all having for their object the more or less compulsory performance of the Cesarean section by the "physician or other officer of the place."

In fact, some of these laws would not do violence to the intelligence of latter-day physiologists. In *Eid und Pflicht*

¹ Legregia Diget., lib. xx., A.C. 600.

² Schwarz, Mon. f. Geb., Sup., vol. 1861, p. 121.

einer Sachenfrau, Heilbronn, December, 1772, Article 7th, the following well-digested instruction occurs: "Since occasionally the fruit of a woman dying pregnant may be saved by a cut, therefore the midwife is required to attend to the following points, viz.: In case the mother dies of a long, slow, and wasting disease, such as phthisis, the fruit dies with her always (?); therefore, the operation is useless. On the other hand, if she dies suddenly, and has borne her fruit seven months, the child may yet be saved, and the midwife shall proceed at once to operate—the relatives to the contrary notwithstanding."

With the same general objects, laws have been enacted as follows: By the City Council of Frankfort, in 1786; by the Duchy of Kurhessen, in 1767 and 1787; the Lippe-Detmold law of 1789; by the Grand Duchy of Baden, in 1827; at Wurtemberg, in 1755; at Nassau, in 1818 ("if mother has been pregnant five months"); the old Saxon law; the Bavarian law of 1816 ("the midwife to treat the patient as if in a trance till the physician arrives"); and the Russian law, which left all to "the judgment of the physician."

The semi-medical reports of these cases in olden times were such as to have caused the enactment of absurd legal requirements. In the *London Hospital Reports*, 1872, vol. xiv., page 240, Dr. Aveling has collected 30 cases illustrative of the ignorance and superstition concerning this subject. Conspicuous among these is that of the Princess Pauline de Schwartzenberg, who died in consequence of several severe burns, and twenty-four hours after death an infant was withdrawn from her womb, which ultimately survived. This is cited as "well known," and "still believed to be true."

Meanwhile science has been recording *facts*. In the *Wiener medicin. Wochenschrift*, Drs. Hyman and Lange have collected 331 seemingly authentic cases, all reported in the present century. Of this number, only 19 of the children were born living. In the *Gazette Hebdomadaire* for November, 1860, M. Devilliers is quoted as having published a thesis in 1838 on the Cesarean section practised after death, in which he had collected 49 cases, and classified them according to their results, thus: 7 infants were dead when extracted, 7 survived, and 37 lived from five minutes only to thirty-four hours. Among these were two pairs of twins. Since then, in the

same journal, there has been added a collection of 22 more cases, in which the results are given as follows: 9 infants were born dead, 6 survived, and 7 lived from a "few minutes to five hours."

In a discussion before the Berlin Obstetrical Society, 1864, Dr. Boehr refers to a collection of cases in *Casper's Wochenschrift*, which I have been unable to secure, and in which, out of 147 cases, only three instances of living children occurred.

For our own country, I can only find a reference to a collection of twelve cases by Dr. L. Ch. Boislinière, of St. Louis. In these, the post-mortem Cesarean section was performed within fifteen minutes of the mother's death, from eclampsia and cholera. Two children only were extracted alive, and these lived only for a few minutes. The discrepancy in these results is so great that there can be but one explanation of it.

The great object in the collection of all these cases seems to have been to establish some ratio between the whole number of mothers operated on, and the number of children rescued alive. But the ratio of successful results is not material, inasmuch as the mutilation of any number of dead bodies is as nothing to the saving of one living child.

The practical questions to be considered are—the period of pregnancy when the child may be delivered with any favorable prospect; the length of time after the death of the mother when operation promises success; the operation indicated; the diseases which render operation unnecessary, and the best means of resuscitating the child. I will discuss these seriatim.

1st. *The Period of Pregnancy when the Child may be Delivered with any Favorable Prospect.* The answer to this would seem to be sufficiently simple. Dr. Thatcher, who claims to have had much experience in the Cesarean section after death,¹ and who considers it entirely too much neglected, regards it as the duty of every physician meeting with a case advanced to the seventh month of utero-gestation, when there are present any signs of life in the child, to give the latter the benefit of its "individual vitality."

So, also, Dr. Berg,² in his citation of the Russian laws on this subject, urges the Cesarean section, or other operation, when the mother has advanced to the thirty-third week of ges-

¹ Transactions of the Edinburgh Medico-Chirurgical Society, June, 1860.

² Casper, xxiv. Heft, page 219.

tation, and is not more than twenty minutes dead of other diseases than cholera, etc.

For all purposes of practice, it may be assumed that an infant, delivered by Cesarean section, is as likely to live as one born at the same period of pregnancy in any other way, and as there is incontestable evidence of children having lived who were delivered from a living mother at the sixth month of utero-gestation, and especially as we are dealing entirely with *possibilities* and not probabilities, we will be safe in the adoption of a rule—to perform forcible dilatation, or the Cesarean section, on all otherwise favorable cases which have attained to the neighborhood of the sixth month of pregnancy.

Leaving out of view any question of Church rites—which are still insisted on in the Roman Church—I advocate this earlier month for the yet other reason, that there may occur in certain cases good and urgent legal motives for the preservation of the life of the child, even though it be only for an hour.

2d. *The Length of Time after the Death of the Mother when Operation Promises Success.* This question is encompassed by more than ordinary difficulties. It must be remembered that, all other things being equal, the sooner after the death of the mother the child is delivered, the greater the probability of good results. Again, if a child is manifestly living, as indicated by its movements, or by the sound of the fetal heart, there can be no question of the propriety of an operation; but the converse of this is by no means true, and we are then obliged to fall back on observation or recorded experience.

In the Hunterian Society discussion,¹ Dr. Lever relates that he has several times seen the movements of the fetus in utero, half an hour after the mother's death, and was only restrained from efforts to rescue by objections interposed by the relatives.

M. Hatin² brought this subject before the Academy of Medicine of Paris in 1861, in an able paper, in which he represented that the "French law was very deficient in respect to saving the life of the child." M. Laforgue, Professor of Midwifery at Toulouse, and M. de Kergaradec, member of the Academy, have likewise published papers calling attention to this important point.

¹ London Medical Times, N. S., vol. xvi., page 507.

² London Lancet, vol. i., page 313.

Toward the solution of this problem, with others, a tabulated record is offered of all the cases which the writer has been able to find, which have borne the appearance of authenticity. From this it appears that, of 55 cases, the time that elapsed between the death of the mother and the removal of a *living* child was in 40 as follows: Between 1 and 5 minutes, including "immediately" and "in a few minutes," there were 21 cases; between 5 and 10 minutes, none; between 10 and 15 minutes, 13 cases; between 15 and 23 minutes, 2 cases; after 1 hour, 2 cases, and after 2 hours, 2 cases.

These latter cases it is proper to examine very carefully. The record of number twenty-nine comes to us through the *AMERICAN JOURNAL OF OBSTETRICS*, Vol. IX., page 497, in a private letter to the Philadelphia Obstetrical Society, from "P. A. Verouden, Netherlands, Member of the Physical Council of the Provinces of Guelderland and Utrecht," and represents the mother, æt. 35, to have died of hemoptysis from pulmonary consumption, in the sixth month of pregnancy; that two hours after, the child's heart was "heard to beat distinctly;" that the child was then removed by Cesarean section; "taken to church, baptized, and lived several hours after the ceremony." Whether this recorder was a physician or not does not appear, but is inferential from the fact that the inspiration of the communication came from his having read a report of Dr. Kelly's case before the Philadelphia Obstetrical Society. The recency of this case, however, leaves open the opportunity of verification. The importance of the observer being a competent medical practitioner is readily apparent.

Number thirty-one is reported by Dr. M. O'Hara, of this city, and appears in the *Philadelphia Medical Times*, vol. v., page 301. This mother likewise died from hemorrhage and advanced phthisis. The child was removed between one and a half and two hours after, "gaspd three times, and was baptized." Excepting for Church or legal reasons, these two cases are of little value.

Not so, however, with case number fifty-four, of the one-hour series. This was reported to and by a member of the Cincinnati Obstetrical Society, Dr. J. L. Cleveland, and appears both in the reported proceedings of the society, and in the *Cincinnati Lancet and Clinic*, July 20th, 1878. The mother is here

represented to have had convulsions (probably uremic) for about two weeks, and is supposed to have died in one. For reasons mentioned, the time which elapsed before the operation was "full one hour." The child was removed asphyxiated, but the heart-beat was perceptible. It gasped in a short time, and in the course of an hour seemed fully restored. It "was small, near full term, and is still alive, and in good health." This is in all respects the most interesting case of the whole series.

In the second case of the one-hour series—number twenty-eight of the table—there are but few particulars given. It was reported by Dr. J. H. Blatner, in the Transactions of the Albany County Medical Society, January, 1875,¹ and is interesting only from the child having been born "living, but asphyxiated." It expired in about ten minutes. No mention is made of the cause of the mother's death, or the means resorted to to establish the vitality of the child.

With regard to the cases rescued within twenty minutes after the mother's death, they are so numerous and well authenticated that no question can be raised as to their value in this connection.

Efforts have been made to establish the probabilities in such cases by other observations, and experiments upon the lower animals. Dr. Brunton² gives an account of a fetus rescued alive, after having been "retained in the membranes for a quarter of an hour after birth." Weisberg, in the *Dictionnaire des Sc. Méd.*, Vol. XIX., page 388, furnishes three such cases—one having lived seven minutes, and two others each nine minutes after birth in their envelopes. Buffon and Schierig performed many experiments on animals, which were afterwards confirmed by Edwards. It was found that "pups lived half an hour after birth in the membranes," and if plunged into warm water, continued to have a pulse-beat for many hours. Breslau³ likewise experimented on guinea-pigs with the same object. He commenced by defining the death of the mother as "when the movements of the heart have sunk to the minimum; when there is no peripheral circulation; when the capacity for respiration has entirely ceased; and when instinc-

¹ AMER. JOUR. OBST., May, 1875.

² Transactions Obstetrical Society, London, Vol. XIII., page 88.

³ Monatschr. f. Geburtsh., August, 1864.

tive and reflex movements no longer occur. This is death. But when the movements are rare and feeble, the limbs flaccid, respiration difficult, interrupted, and painful; the circulation weak, but still felt in the umbilical cord, and reaction slight on external irritation, the fetus is only apparently dead." The results of his experiments make the possibility of living, within a certain short time, depend alike on the cause of the death of the mother and on the period of the removal of the fetus after death. In operating after five minutes, he did not extract a living fetus, and, if later than eight minutes after the mother's death, not even one of the class denominated "apparently dead." In applying his observations to the human subject, and to practical obstetrics, he remarks that "daily experience proves that the power of resistance of the human fetus is greater than that of the brute," but that the Cesarean section will even here furnish no prospect of a living or even an "apparently dead child, if not performed within fifteen or twenty minutes after the death of the mother."

It may be mentioned also that this life-maintaining power of the fetus was recognized by Harvey, inasmuch as in his anatomical exercitations he asks: "How cometh it to pass that the fetus, being new-born, and abiding still in its bag of waters, can subsist for some hours' space without any danger of suffocation, yet, if he has but once attracted the air into his lungs, he cannot afterwards live one minute without it?"

Such observations, however, might be quoted indefinitely. But we are dependent for any positive data almost entirely upon our table. If we accept this record, we may conclude that it is *possible* for a child to be delivered alive after its mother may have been dead for two hours, and for a child to be "saved to the State" from a mother dead for one hour.

3d. *What Operation is Indicated?* The choice is as between Cesarean section and forcible delivery per vias naturales. The ready practicability of the one is patent; the other still sub judice. H. Raynes-Gringley¹ asserts that he has "no hesitation in pronouncing on the practicability of extracting a living child from a dead mother, per vias naturales, provided" he "was present at the death;" and Cazeaux calls attention to the fact that the child may be so nearly born that, after a cut may have been made in the abdomen, it might be found impos-

¹ London Medical Times, Vol. I., N. S., page 155.

sible to withdraw the child, in that direction, as easily as to advance it in the direction in which it has already started, and thus valuable time have been lost.

Barnes, in his "Obstetric Operations," quotes an Italian writer¹ who lays down the rule that in cases where there is any doubt of the mother's death, forced delivery should be resorted to as a harmless operation! And Dr. Esterle, Professor of Obstetrics at the Maggiore Hospital, Novara,² goes so far as to recommend the same practice—generally by version and extraction—"whenever the mother's death is imminent." He refers, in justification of this practice, to five cases of his own, in which forced delivery rescued four living children from dying mothers, and to one of Cesarean section, by Roser, performed successfully under like circumstances. (These latter recommendations are quoted only for condemnation.)

It is proper also to refer to an unfinished article on this subject, by Dr. Thèvenot, in the last (October) number of the *Annales de Gynécologie*. His plea is for artificial delivery, per vias naturales, in all cases; and urges in support of its advantages that intervention may always be immediate; that the certainty of the death of the mother need not so largely interest us; that the Cesarean operation, of itself, is so formidable that we must not resort to it except with the approval of the family, whose disapproval or hesitation may necessitate delay; and, moreover, that there are certain delaying preparations always incident to so extensive an operation as the Cesarean section.

With our knowledge of the fact that approaching death in pregnant women is often accompanied by relaxation of the cervix, and even rapid completion of labor, we must concede to these views a binding force in a certain number of cases. When, however, we remember the difficulties often encountered in our efforts at delivery of children, through the disproportioned pelves of living mothers, the selection of the operation is still a question of rapidity of execution. We conclude then: first of all, there should be an absolute certainty of the mother's death. Then, with a due appre-

¹ Probably Prof. Rizzoli, who devised this measure as promising "better results to the child" and "perhaps no distress to the dying mother." Italy, Belgium, and Germany have accepted this recommendation. (Dr. Thèvenot, *Progrès Méd.*, June, 1878.)

² London Medical Times, Vol. I., 1862, page 441.

ciation of the necessity for expedition, if the child has not already engaged in the pelvic brim, the Cesarean section should be made with the greatest possible dispatch. If the head has so engaged, it then becomes a question of judgment as to whether forcible delivery per vias naturales, or the Cesarean section may be most quickly accomplished.

4th. *The Diseases which Render Operation Unnecessary.* It will be remembered that the cause and mode of death of the mothers have been noted as largely influencing the result to the child. Not only has this conclusion been arrived at by experimenters on animals, but with as much positiveness by bedside observers. It will also be remembered that many of the ancient laws on this subject were qualified by a knowledge of this fact.

Professor Esterle, already referred to, evidently basing his inferences on purely theoretical grounds, makes the statement that in cholera, phthisis, hemorrhages, the acute exanthemata, dropsy, eclampsia, syphilis, cancer, cerebral disease, and lead poisoning, the death of the child usually precedes that of the mother. Hening seems to have arrived more nearly at the true state of the case, when he formulated his observations thus: "The results of an operation performed post mortem matris are little favorable to the child, but it is most likely to succeed when death has followed some shock to the nervous system; less favorable to the child when the death agony has been prolonged, and most unfavorable of all when the mother has been suffocated by carbonic acid gas." We must differ both from the statement of Esterle and the conclusion of Hening. Of the cases of children born living, as given in the table, the causes of death in the mother are mentioned in thirty-six. Of this number, eighteen died in various kinds of convulsions, the most of which were eclamptic; five died of advanced phthisis; three more from profuse hemorrhage from phthisis; three of organic heart disease; two suddenly by accident; one of thoracic aneurism; one of chronic dysentery; one of metro- (?) peritonitis; one of gangrene of neck, and one had "been ill a long time." Of those born dead, the cause of death in the mother is given in six cases, viz.: two from cholera; one from severe burn; one from apoplexy; one from uremia, and one from suffocation. It will be remembered also that previous mention has been made of

the twelve cases of Dr. Boislinière, all of which died of "cholera or eclampsia," and the two children extracted alive lived but a few minutes. It is not stated, but it is probable, that the two latter were of the eclamptic cases, inasmuch as the universal testimony, elsewhere, is unfavorable to operating at all, when the mother has died of cholera. Dr. Balocchi, in the proceedings of the Società Medico-Fisica of Florence, 1876, as reported in the *Gaz. Med. Italiana Toscana*—number thirteen of table—questions the propriety of operation after death from cholera, in that, "of a large number of cases" so dying, "only one child was rescued alive, and that lived but for a short time; one was cyanosed, and in all the others putrefaction was more or less advanced." The case of Dr. Shippen—number fifty-five of table—substantiates the same conclusion. The mother was a "robust young woman, near her confinement," who died of cholera, "after a terribly short illness," and was opened "immediately," yet the child was dead. In this case everything was especially favorable to a better result.

It may be mentioned that cholera, in its various epidemics, has furnished large opportunities for observation in this respect, and the result has been almost uniformly the same. A proper understanding of the cause of this will probably be found in the general disintegration of the blood in cholera; and if such is the case, we are accordingly obliged to classify under this disqualifying head all of the congeners of this disease. We may then conclude that it is useless to operate on a woman, however soon after death, with any hope of securing a living child, who has died of any disease in which disorganization of the blood was a prominent factor.

5th. *The best Means of Resuscitating the Child.* It is apparent that the necessary measures differ, in no wise, from those indicated in like conditions of children born in the usual way. It is, moreover, no part of the purpose of this paper to specify the various conditions under which children die in utero. It is only of importance to remember here that the last vestige of vitality may vanish for actual want of strength to maintain it, or for the reason that the strength is yet latent, because of the absence of respiratory action to develop it. The first condition is true of most cases of greatly premature deliveries; the second is represented by the asphyxia of chil-

dren retained too long in the abdomen of the dead mothers. The treatment of the two classes, it will be observed, must be widely different, and the existence or non-existence of the infantile heart-beat will determine whether any efforts are to be of value in either.

On the management of children born prematurely, these investigations throw no new light. The condition is well understood, and the conduct of such cases is a part of everyday practice. As to the second class—"life without respiration"—every effort should have for its object the maintenance of the one to the end of establishing both.

In the quoted experiments of Buffon and Schierig on pups, it was stated that if they were plunged, still in their fetal envelopes, into warm water, after delivery, the pulse beat for several hours. Though the conditions are somewhat different, we may perhaps receive a valuable hint from this fact. If the child fails to respond to the simple and usually resorted to measure of alternate application of heat and cold, it is plainly a duty to restore and maintain any deficiency of animal heat that may have been thus lost. This may probably be best accomplished—as in case number seventeen—by the envelopment of the child in hot cloths. Immediately thereafter, recourse should be had to artificial respiration—preferably by the Silvester method—and to be effective it must be continuous, despite the most discouraging circumstances, short of the absolute cessation of the heart-beat. This was especially insisted on by the older authorities in midwifery, and it is much to be regretted that their teachings of the favorable results that may be expected from persistent artificial respiration, even after infants have failed to "respire for two or three hours," should nowadays be so little emphasized. In our table it will be noted that this expedient was resorted to in at least twelve cases, and was successful in two of them after it had been maintained "continuously for one hour." In one other case, "when the heart-sounds were feeble," it was continued for *two* hours, and until "the child was able to breathe without assistance."

This valuable measure may be supplemented advantageously by the occasional employment of stimulating substances to the surface of the body, especially by a piece of ice over the epigastrium, and by the careful application of dilute ammo-

nia, weak vinegar, or the fumes of burning paper to the nostrils.

There still remains another—perhaps least often adopted—measure, yet possibly of equal importance with any mentioned, viz., mouth-to-mouth insufflation. This may be mediate or immediate. The first by the introduction of a flexible tube into the larynx, the second by applying the mouth to the mouth of the infant. In the reported proceedings of the N. Y. Obst. Soc., in the last number of this JOURNAL, Dr. Garrigues has recorded the case of an infant born in a state of profound asphyxia, and presenting but a few slow and feeble heart-beats, which was kept living for seven hours by means of insufflation through a flexible catheter passed into the trachea, whilst the child was kept enveloped in hot cloths. “Two and a half hours elapsed before the child gave the first respiratory gasp.” His commentary on this case was, “*that if only the heart beats, the life of the child may be saved, even if spontaneous respiration does not occur for hours.*” Insufflation may readily be accomplished, as suggested by Dr. Jewett, “through the intervention of a coarse towel; passage of air into the stomach being prevented either by pressure upon the epigastrium or by gently forcing the larynx back against the esophagus.” This plan was resorted to in only eight of the tabulated cases, but furnished gratifying results in all. In one case—number twenty—when it had been omitted, and the child died on the seventh day of atelectasis, the operator advanced the criticism that, “had mouth-to-mouth inflation of the lungs been substituted for artificial respiration, possibly the child might have been saved.” M. Depaul recommends that from ten to twelve insufflations should be made in a minute. It is not impossible that, after the removal of mucus from the fauces, this measure may prove a most valuable adjunct to artificial respiration, by fully distending all of the pulmonary tubes, and freely opening the way for admittance of air to all the vesicles by artificial respiration.

It will be observed that no conclusion has been indicated as deducible from a comparison of the number of children saved to the whole number of mothers operated on. With the scant opportunities for securing reports of unsuccessful cases, such a comparison is utterly useless. See, for instance, the tables of Lange, as showing that prior to 1700 as many as 70

per cent were saved, whilst since 1800 there has been scarce 2 per cent. In truth, so much interest attaches to a successful case that a report of it will be quoted in almost every contemporary journal; and so little to an unsuccessful one, that the latter are seldom published at all—except, perhaps, to adorn a discussion originated by the former. Thus it will be seen there are not sufficient data upon which to found even a proximate conclusion. Happily, this is of small importance.

In regard to the method of operating, little need be said. The ordinance of the Venetian Senate, “to perform the Cæsarean section as though the mother be living,” is said to have had its origin in the acknowledgment of Pen, the celebrated professor of midwifery of Paris, of having operated on a woman “supposed to be dead, but who was not.” In this age of enlightenment, one is scarcely willing to acknowledge the possibility of so horrible a blunder. Our education leans, if possible, even too much toward conservatism. We can, however, well afford to accept the conclusion of Bouchet, whose essay on the subject was crowned by the prize of the French Academy, that “with the last pulsation of the heart the mother dies.”

As Dr. Blundell remarks of such matters, “as long as we are surgeons, let us be men.” Our respect for the dead is such as to command from us, in the performance of post-mortem Cæsarean section, almost, if not the same care as is bestowed on the living.

As to a compulsory law having reference to this subject, it is referred to simply as having been operative over many of our transatlantic brethren, for almost all time. It would be at variance with the spirit of our institutions and the claimed status of our profession. At the same time, it is evident that there is an incongruity in recognizing a criminal offence in the production of an abortion at three months, yet failing to see a constructive murder in the wilful neglect to rescue a perfectly-developed, perhaps healthy child, vigorously struggling for escape from the abdomen of its dead mother.

In conclusion, it would seem that the sentiment of the medical profession should be so pronounced on this important subject that, in every proper case, of which the physician is to be the judge, no parent or other relative or friend would dare to interdict any measures necessary to the possible saving of a living child.

No.	Journal Record and Operator.	Cause of Death of Mother.	Time of Operation after Death of Mother.	Condition of Child when Born.	Means of Resuscitation Adopted.	Remarks.
1	Wiener med. Woch., August, 1874.—Dr. Bandl, asst. to Prof. Von Braun, Vienna Gen. Hosp.	Chronic peritonitis.	5 minutes.	Asphyxiated.	"All attempts at resuscitation."	Fetal heart beat about 60 per minute for 10 minutes. Inspired and died.
2	Révue Méd., Jan., 1830. Hôpital St. Louis—M. Hugier, Interne.	Hemoptisis. "Died in four minutes at 7th month of pregnancy."	5 minutes.	Heart-beat scarcely perceptible	Hot bath, artif. resp., and frictions.	"Child now 30 days old and doing well."
3	Heidelberg klinische Annalen, Vol. x., No. 3. Observations on F. M. C. S.	Died after operation for rickets, of metro-peritonitis on 8th day.				Child living. Limits to time for operating, "3 hours after mother's death."
4	Edinburgh Medical-Chirurgical Society Trans., June, 1850.—Dr. Harley. Read by Prof. Simpson.	"Effusion into air passages consequent on heart disease."	"Few min."			"Child doing well."
5	Humboldt Medical Archives, Vol. 4, 1870, p. 328.—Dr. E. L. Fechan, St. Louis, Mo.	"Comatose after a convulsion."	10 minutes.	"No effort to respire for 25 or 30 min."	"Usual means."	Child did well for months.
6	Le Progrès Médical, June, 1873.—M. Marcé, Interne, Hôpital la Pitié.	Uremic eclampsia.	Immediately.	Did not breathe.	"Stimulated."	Doing well.

7	Med. Times and Gazette, July 21st, '77. Trans. Lon. Obstet. Soc.—Dr. Buckell.	Suddenly, of aorta.	of 20 to 30 min.	"At once."	"Apparently dead."	Hot bath and insufflations.	"Living."
8	L'Abeille Médicale, Aug. 23d, 1843.—Dr. Loweg of Vere.	"Ill a long time."		"At once."	"No signs of life."	Hot bath, artif. resp., stimulants to spine.	Heart perceptible in a few minutes, and soon revived. "Doing well 3 months after."
9	"Upper Canada Journal," 1851.—E. M. Hodder, M.D., etc.	Apoplexy, lasting 38 hours, and profound coma for 26 or 27 hours.		"At once."			At first promised little, but now "doing well." Born ten days before full term.
10	N. Y. Med. Jour., Jan. Vol. 7, 1851.—Dr. Blundell.	Run over and died in a few minutes.		"On arrival," 13 min.		Artificial respiration for 15 minutes.	In last months of pregnancy. Ultimately resuscitated completely.
11	Monthly Jour. of Med. July, 1851.—Dr. Schneider.			At once.	"Still-born," "Apparently dead."		Per vias naturales. Soon revived.
12	N. Y. Jour. of Med., Vol. x, 1853.—Dr. F. R. Owens.	Hemoptisis brought on by vomiting. Blood gushed out.	on by	Dead on arrival. "Went for instruments and operated soon as possible"	Apparently dead.	Hot baths, art. resp., stimulants to nostril, art. resp., for one hour.	Weighed 5 lbs. at birth. Now weighs 8½ lbs., and is 7 weeks old and thriving. Did not cry till 3 hours.
13	Repertorio Médico-Chirurgico de Torino.	C. dysentery for two months. Died much emaciated.	for two months.	13 minutes.			Did not cry for some time; 32 minutes afterward began to suck. Now tolerably robust.
14	American Med. Recorder, Vol. vi.—M. Borroni, Surgeon at Salto.			12 minutes.			Case quoted from foreign journal. Child living.

No.	Journal Record and Operator.	Cause of Death of Mother.	Time of Operation after Death of Mother.	Condition of Child when Born.	Means of Resuscitation Adopted.	Remarks.
15	Proceedings of the Società Medico-Fisica of Florence, 1876.	Cholera.		Dead.		Dr. Balocchi questions the propriety of operating in cholera.
16	Lond. Med. Times.—M. Campbell, Interne, La Maternité.	Died suddenly—probably from heart disease.	10 minutes.	"Born alive."	Insufflation and stimulants.	Mother in last stage of pregnancy. Child "now 55 days old, and in a perfectly prosperous condition."
17	Edinburgh Med. Jour. (Trans. Lond. Obst. Soc.)—Peter Brotherton, F.R.C.S.E.	Syncope from concealed hemorrhage.	23 minutes.	"Gave no signs of life when extracted."	Month-to-month insufflation. Hot cloths. Artificial respiration for 15 minutes.	Child deluged with blood; is now living, three months after, and as fine and healthy a child as was ever seen.
18	L'Union Médicale of the Gironde. — M. Bonnet.	Apoplexy, 7th month.	At once.			Respired feebly in a few minutes; 15 minutes later, it groaned feebly; ultimately it was saved.
19	Lond. Lancet (Trans. Lond. Obst. Soc.), 1877.—Dr. Playfair.		½ hour.			Child saved. This case elicited in a discussion on Dr. Buckell's case.
20	"Proceedings of Med. Soc. of the County of Kings," N. Y. S., Jan. '78.—C. Jewett, M.D.	Suddenly, of diphtheria. Immediate cause not ascertained.	6 minutes.	"Apnea."	Artificial respiration for at least half an hour.	Child died 7th day of atelectasis. "Possibly child might have been saved by mouth-to-mouth insufflation."
21	Unpublished case at Phila. Hospital, '62.—Resident Physicians. Service of Dr. Penrose.	Suddenly, during convalescence from diphtheria.	At once.	Asphyxiated.	Artificial respiration. Hot baths. Stimulants.	Persistent efforts not made to save the child through ignorance of the possibility.

22	Wiener med. Wochenschr. and Memorial, No. 6, 1877.	"Woman sickly and died eight days after full term."	15 minutes.	"Heart still beating."	Artificial respiration for two hours.	When the child was "able to breathe without assistance."
23	Epoca Medica di Seville, March, '73.—Dr. Gomez Nieto.	Puerperal convulsions.		"Semi-asphyxiated."	"Means of reanimation resorted to" for 15 minutes.	Did well.
24	Gaz. des Hôp., April 20th, 1861.—Dr. Lemarley.	Eclampsia.	2 hours.	"Still-born."	"Efforts to resuscitate."	Were continued for forty minutes, at end of which time heart ceased to beat. Auscultation detected heart-beat before operation.
25	Mon. f. Geb., July, '62.—Prof. Breslau.	"Hydropericardium and softening or pneumonia of right side."	15 minutes.	Heart beat feebly. Weighed 4 pounds.	Insufflation and rubbing for one hour.	Child restored and cried loudly. Died 7 hours after of exhaustion.
26	"Progrès Médicale," 1873.—M. Marcet.	Sudden convulsion. Patient dying comatose.	3 minutes.			Child living.
27	Wiener med. Wochenschrift, March, '73.—Dr. Blumenfeld.	Advanced phthisis.	10 minutes.	Very feeble.	Every effort made to save child.	Lived 3 hours. Child only weighed 1½ pounds.
28	Trans. Albany County Med. Soc., Jan., '75, AMER. Jour. Obst., May, '75.—Dr. J. H. Blatner.		1 hour.	Asphyxiated.		Lived 10 minutes and expired.
29	AM. Jour. Obst., Vol. ix., page 497. Letter to Phila. Obst. Soc. from P. A. Verouden, Netherlands.	Hemoptisis from phthisis.	2 hours.	"Living."		Sixth month, taken to church, baptized, and lived several hours after.

No.	Journal Record and Operator.	Cause of Death of Mother.	Time of Operation after Death of Mother.	Condition of Child when Born.	Means of Resuscitation Adopted.	Remarks.
30	Ibid. Nov. '75. Trans. Phila. Obst. Soc.—Dr. Jos. B. Kelly.	Thoracic aneurism (?).	15 minutes.	"Heart-beat very feeble."	One hour's faithful and continuous artificial respiration.	Delivered by Version. "Since done well."
31	Phila. Med. Times, Vol. v., page 301.—Dr. M. O'Hara.	Hemorrhage of advanced phthisis.	Between 1½ and 2 h'rs.			"Gasped and was baptized."
32	L'Abeille Médicale, Oct. 14th, 1872.	Convulsions.	Few minutes.	No signs of life when delivered.	Mouth-to-mouth insufflation and artificial respiration.	At first but little successful; but child "afterwards breathed and began to cry."
33	Journal de Médecine, Vol. xv., p. 185.—M. Boyrone.	Dysentery.	Immediately.	"Seemingly dead."		Did not breathe "till twenty minutes after birth." Now a "fine, robust child."
34	Cincinnati Lancet and Clinic, July, 1878. Trans. Cincinnati Obst. Soc.—Dr. J. L. Cleveland.	Had had convulsions for about two weeks, and supposed to have died in one—"probably uremic."	"A full hour."	Asphyxiated, but heart-beat perceptible.		Child gasped in a short time, and in one hour fully restored; was small, near term, and is "still alive and in good health."
35	Private from Dr. S. Caro, N. Y. City. Unpublished case.	"Albuminuric convulsions during delivery."	Immediately.	Dead.		Twins. Mother died during delivery of first child. Cesarean section immediately, but did not save the child.
36	Lond. Lancet, Vol. i., '37 and '38, p. 28.—Wm. Dawson, Esq., F.R.C.S., and Lecturer on midwifery.	Obscure brain disease for four months. Died in convulsions. Greatly emaciated.	15 minutes.	Child emaciated and very weak.	Insufflation and artificial respiration.	Child lived twenty minutes.

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37	Ibid. Vol. i., 1869, p. 638.—Service of M. Guyon, Hospital Necker.	Moribund on admission. History of convulsions. "Half an hour in violent agony." No albumen.	Few minutes.	No signs of life.	No signs of "Ordinary means."	Child sent to the country in few days in charge of wet-nurse.
38	Berlin Med. Zeit., July 6th, No. 27.	Died in labor of apoplectic convulsion. Paralyzed at 8th month.	15 minutes.	No signs of life.	"Ordinary means."	"Since continued well."
39	Quebec Chronicle, '67.—Drs. Tixier and Sallath.	Run over by coal cart and died at once "in last stage."	At once.			Fine, healthy boy who appears in no way to feel the effect of the accident to his mother.
40	Lond. Med. Times, Vol. i., U. S.—Geo. Harley.		3 minutes.	Apparently dead.	"Artificial respiration for some time."	Ultimately recovered.
41	Lond. Med. Times, Vol. i., U. S.—Hy. Raynes.	Apoplexy. Died in 15 minutes after seizure.				Child died whilst making fruitless attempts to deliver per vias naturales.
42	Ibid. Vol. xii., U. S., '55.—"South Staffordshire Hospital."	Severe burn.		Showed no signs of vitality.		
43	Obst. Report of "Cork Maternity." Dub. Med. Sciences, April, 1878. — Dr. Jones.	Hemorrhage. Convulsions. Immediate death.	At once.	Twins. One dead; one asphyxiated.		Child lived only a short time.
44	Mon. f. Geburtshk., Dec., 1869.—Dr. Pingler. (Case 1.)	Died of severe dyspnea. Had edema of legs.	Had 23 minutes.	Cord pulsated.		Child lived 10 months. 35th week of pregnancy.
45	Ibid. (Case 2.)	Apoplexy.	15 minutes.			Child lived 32 minutes.
46	Berlin klinische Wochenschr., 1869. —Dr. Beckman.	Suddenly after an attack of convulsions.	15 minutes.		Persistent resuscitating means for 2½ hours.	Child weighed 4 pounds. Regular respirations were established, and the child lived.

No.	Journal Record and Operator.	Cause of Death of Mother.	Time of 'operation after Death of Mother	Condition of Child when Born.	Means of Resuscitation Adopted.	Remarks.
47	Archives de Tocologie, Jan., '75.—Dr. Bailly.	Eclampsia or suffocated by prodigiously swollen tongue.	15 minutes.	Dead.		Could not be resuscitated.
48	El Telegrapho Medico, Trimestre, 1848.—Dr. Celestius de Pelayo.	"Tetanic convulsion."	Immediately.	Asphyxiated.	Insufflations and frictions.	Completely resuscitated. This the only success out of six cases by Dr. de P.
49	Unpublished letter to Dr. R. P. Harris, from Dr. Rufus Woodward, Worcester, Mass., 1871.	Apoplexy. "First fit."	Without delay.	"Fetal heart still beating."	Hot bath and usual manipulations.	In one hour cried lustily. Lived 8 hours, and died by neglect of the family physician—through jealousy.
50	Ann. Univers. Maz., 546 (caust.), Vol. iv., 483.					Child lived two hours.
51	Archiv. Gynäk., ii., 1, 1871.—Dr. Hoscheck.	Phthisis.	10 minutes.	Apparently dead.	Insufflation, mouth-to-mouth.	Mother near full term.
52	Gaz. des Hôp., lxxii., 1871.—M. Molinier, Interne, Hôpital Necker, Paris.	"Convulsions and died in half an hour."	Some minutes.	No signs of life.	Insufflation and artificial respiration for some time.	"Had the happiness to hear it cry." (Possibly duplicate of 37.)
53	Lond. Med. Record, Feb., 1874.—Dr. Rota.	"Anasarca."	Few minutes.	Asphyxiated.		"Eventually lived."
54	"Gazette Obstetricale."—Dr. Pinnard.	Hemorrhagic central tumor. Died after several epileptic convulsions.	5 minutes.			"Child resuscitated with some little difficulty, and only lived 3 hours."
55	Private letter from Dr. Edw. Shippen, Med. Direct., U. S. N.	Cholera after a "terribly short illness."	Immediately.	Dead.		The mother, a robust young woman near her confinement, operated on by Dr. Benedict, physician in charge Philadelphia Hospital.

In the preparation of the above tables I wish to acknowledge valuable assistance from my young friend and pupil, Dr. Robert C. Hutchinson.

A COMPARISON BETWEEN THE CESAREAN SECTION AND THE
HIGH FORCEPS OPERATION.

A GRADUATION THESIS.

BY
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Boston.*

(With six tables.)

THE maternal mortality in cases of Cesarean section varies, according to different authors, between 85 per cent as tabulated by Radford, and 24 per cent as shown by Harris.

Statistics of the high forceps operation vary in much the same manner. Dr. Harper, for example, in the *Obstetrical Transactions*, Vol. I., says that he used the long forceps in 162 cases, and that only 1 per cent of the mothers died. Now as the long forceps may be used when the head is distending the perineum, usually quite as well as the short forceps, and often to much greater advantage, it is not fair to judge of the high operation from such data as these, since it is not the instrument, but the relation of the fetal head to the maternal pelvis which renders its use dangerous.

It is the object of the writer to collect all the cases in which the high forceps operation was employed, and all the cases of Cesarean section reported during the last twenty years.

In collecting cases of Cesarean section, care was taken to exclude cases of abdominal section after rupture of the uterus, as suggested by Dr. Harris, in the *American Journal of the Medical Sciences*, Vol. CL., who points out that such cases are more favorable in their results; because, in the first place, the patients are more robust, as a rule, and in better health than those who submit themselves to Cesarean section; and, secondly, since the operation is less likely to be delayed.

The names of the operators and the dates of the operations were also recorded, and thus no cases are considered twice.

The cases subjoined are those reported since 1858, and by this means those cases raked up from the past are excluded;

* The subject of this paper was proposed by Dr. William L. Richardson, of Boston, to whom the writer is also indebted for several of the cases, and many suggestions.

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and this seems just, since it is the intention to compare the operations as they are, and not as they have been.

The whole number of cases collected is 244, of which 125 are of Cesarean section; and 119 of the application of forceps to the head above the brim of the pelvis.

The comparative results of the two operations, in the whole number of cases, is seen in the following table.

TABLE I.
CASES REPORTED SINCE 1858.

	Whole No. of cases.	Mother died.	Mother lived.	Per cent of maternal death.	Child lived.	Child died.	Per cent of children died.	Child not reported or dead before operation.	Mother not reported.
Cesar. Sec..	125	45	64	48.8	81*	17	17.7	29	0
High Forec..	119	61	69	39.47	42	68	61.8	9	5

Thus out of the 125 cases of Cesarean section 51.2 per cent of the mothers lived, and in the high forceps cases 60.52 per cent of the mothers lived; while as regards the child, it is 82.3 per cent of recoveries in the Cesarean section against 38.18 per cent in the high forceps cases.

Out of the 125 cases of Cesarean section, 84 cases are fully reported, and in the 119 high forceps cases, the details are given in 68.

In Table II. it is proposed to compare, as nearly as is possible, those cases in which the operations were done under equally favorable circumstances, and the duration of labor is taken as the fairest standard. As the exact duration of the labor is not recorded in some of the cases in which the details are otherwise fully reported, there are included in the following table those cases in which the labor was less than 40 hours, or the liquor amnii not voided less than 30 hours.

TABLE II.
OPERATION WITHIN FORTY HOURS AFTER THE BEGINNING OF LABOR, OR THIRTY
HOURS AFTER THE RUPTURE OF THE MEMBRANES.

	Number of cases.	Mother lived.	Mother died.	Per cent of maternal death.	Child lived.	Child died.	Per cent of children died.	Child not reported or dead be- fore oper.	Mother not reported.
Cesar. Sec..	44	29	5	34.08	35	4	10.25	5	0
High Forec..	54	37	17	31.48	20	29	59.18	5	0

*Twins in two cases.

It will be noticed that of the 84 cases of Cesarean section which are fully reported, in only 44 the labor was of less than 40 hours' duration, and attention is called to the fact that the whole number of cases in Table II. is less than the number of mothers who lived, according to Table I., interesting as showing not only the hesitation with which the operation is decided upon, but also under what unfavorable circumstances it may be successful.

In the third table the two operations are compared, after the elimination of serious complications. Under the head of Cesarean section the following cases are eliminated :

"Abdominal walls thin and necrosed".....	1
Ante-partum hemorrhage.....	1
Bright's disease (lived).....	1
Inproper food.....	1
Cancer of vagina.....	1
Bowel inclosed in uterine wound.....	1

From the high forceps cases in Table II. the following are excluded :

Albuminuria with eclampsia.....	1
Accidental hemorrhage (lived).....	1

TABLE III.

LABOR LESS THAN FORTY HOURS, THERE BEING NO SERIOUS COMPLICATIONS.

	Number of cases.	Mother lived	Mother di. d.	Per cent of maternal death.	Child lived.	Child died.	Per cent of children died.	Child not reported or dead before oper.
Cesarean Section..	38	28	10	26.31	31	3	8.82	4
High Forceps.....	52	36	16	30.76	20	28	58.33	4

Thus in labors of 40 hours or less, there being no complications which would lead us to fear bad results, in spite of the operation rather than because of it, we find that Cesarean section gives 73.69 per cent of recoveries of mothers, while the child lived in 91 per cent; whereas in the high forceps operation 69 per cent of the mothers and 41.67 per cent of the children lived.

In the fourth table the two operations are compared, there having been no additional operative interference.

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From the 38 cases of Cesarean section one case of craniotomy is eliminated. From the 52 cases of high forceps, the following are eliminated: Craniotomy, perforation, and cephalotripsy, 16; version, 2.

TABLE IV.

LABOR LESS THAN FORTY HOURS, THERE BEING NO SERIOUS COMPLICATION, NOR ANY ADDITIONAL OPERATIVE INTERFERENCE.

	Number of cases.	Mother lived.	Mother died.	Percent of maternal death.	Child lived.	Child died.	Per cent of children died.	Child dead before op. or not rep.
Cesarean Section...	37	28	9	24.32	31	3	8.82	3
High Forceps.....	34	28	6	17.6	20	10	33.3	4

Comparison of Tables III. and IV. shows that, when there is no previous operative interference, 75.68 per cent of the mothers recover after Cesarean section in labors of less than 40 hours, there being no serious complication to the labor. It also shows that in the high forceps operation, after the elimination of additional operative interference, 82.4 per cent of the mothers recovered, and 66.6 per cent of the children; but as far as the children are concerned, this is no guide to the mortality of the operation, because in several of the operations the child was dead before craniotomy was performed, and it is fair to assume that many would have died, even if craniotomy had not been performed, since we see that such is the usual result in cases where there is no additional interference.

Craniotomy is said by the highest authority to be comparatively harmless, as regards the mother, when done under favorable circumstances. Now if we compare Tables III. and IV. we find that in high forceps cases *followed by craniotomy*, the percentage of maternal deaths is 55.5, and the conclusion to be drawn is, that this high rate of mortality is due to the high forceps operation, and not to that of craniotomy which followed.

For it must be admitted that there is less danger in dragging a head, which has been reduced in size by craniotomy, through a narrow pelvis, than in dragging a head only somewhat compressed through the same space, since the danger in either operation is due to the injury done to the maternal soft parts;

and the results arrived at in the *eliminated* cases seem to strengthen the conclusions derived from Table III., since craniotomy should improve the prognosis as regards the mother, and the deaths in these cases must, in a great measure, have been due to the high forceps operation which preceded that of craniotomy.

Again, since craniotomy is harmless to the mother, when done under favorable circumstances, the mothers who lived in the eighteen cases may have been saved by craniotomy, and in the next table the two operations are compared, the mothers who lived after craniotomy not being included.

TABLE V.

CASES TAKEN FROM TABLE III. THOSE CASES IN WHICH THE MOTHER MAY HAVE BEEN SAVED BY CRANIOTOMY BEING EXCLUDED.

	No. Cases.	Mother lived.	Mother died.	Per cent of mat. death.	Child lived.	Child died.	Per cent of child. died.	Dead before op. or not rep.
Cesarean Section...	38	28	10	26.31	21	3	8.82	4
High Forceps.....	44	28	16	36.36	20	20	50	4

In the 18 cases eliminated because of craniotomy, we find 55 per cent of maternal deaths.

Table IV. shows 17.6 per cent, and thus we see that the result of Table V. is an exact mean between these two extremes, between which the truth probably lies. In the 55 per cent, however, it must be admitted that there is a possible source of fallacy, inasmuch as no diameters were recorded, and it may be that the pelves were so contracted that high forceps should not have been performed; but the names of the reporters, among whom may be mentioned Hicks, Ramsbotham, Elliot, and others, seem sufficient guarantee against the improper use of instruments.

TABLE VI.

LABOR OF TWENTY-FOUR HOURS OR LESS, THE CASES BEING TAKEN FROM TABLE III.

	No. Cases.	Mother lived.	Mother died.	Per cent of mat. death.	Child lived.	Child died.	Per cent of child. died.	Dead before op. or not reported.
Cesarean Section..	29	23	6	20.6	25	2	7.4	2
High Forceps.....	33	23	10	30.3	12	17	58.6	4

Thus in labors of 24 hours or less, and under favorable circumstances, Cesarean section gives 79.4 per cent of maternal, and 92.6 per cent of children's recoveries, whereas the high forceps operation, under similar circumstances, gives 41.4 per cent of children's and 69.7 per cent of maternal recoveries. Or, in other words, the Cesarean operation is 10 per cent more favorable to the mother, and 51 per cent more favorable to the child, than the high forceps operation. To recapitulate, we find that in 125 cases of Cesarean section, reported since 1858, the maternal mortality was 49 per cent, thus very closely agreeing with the result obtained by Michaelis.

It is said by some writers that even these figures are too favorable, since only favorable cases are reported. But in the cases in Table I., the fact that 64 lived, and 61 died, shows the inconsistency of this reasoning, as the fatal cases so nearly equal in number the successful ones.

Of the 125 cases there are particulars in only 84, and it is from these 84 cases that conclusions must be drawn, since in the remaining cases the operation may have been post mortem, for all we can tell to the contrary.

Table II. shows that out of 84 cases there were only 44 in which the operation was performed within 40 hours from the beginning of labor, showing the fallacy of deriving conclusions from cases taken at large, and without some data to enable us to judge of the condition of the woman at the time of the operation.

Table III. shows that, if we eliminate from the 44 cases in Table II. serious complications, as cancer of the vagina, etc., the maternal mortality is reduced to 26 per cent, from the 34 per cent derived from Table II.

Finally, Table VI. shows that, when the labor was of 24 hours' duration or less, and the above-mentioned unfavorable cases were not included, the maternal mortality is again reduced, and to 20.6 per cent.

These statistics seem to me to present the Cesarean operation in by no means too favorable a light, since in many cases the operations, though done after short labors, and upon women who had no severe disease, were still far from being done under the *most favorable circumstances*. Several of the patients were subject to rickets and osteomalacia, and in many

instances the operation was not performed after the most approved method, nor at the most favorable time, which Ludwig Winkle, the most experienced operator, says is during the labor, and before the membranes are ruptured.

Another means by which the mortality in Table VI. would have, in all probability, been still more reduced, is that many successful cases are reported in German publications, which the writer could not obtain; and as in nearly all the cases occurring in Germany, in which the details were recorded, the operation was very soon after the beginning of labor, it is highly probable that many of these cases, which were excluded for want of sufficiently full report, would have also been included in Table VI., could the publications have been obtained.

On the other hand, as regards the high forceps operation, Table I. shows that in 119 cases, 39.47 per cent of the mothers died. This result seems to present the operation in too favorable a light, since it is the exception, rather than the rule, to find it recorded whether the head had or had not passed through the superior strait before the instruments were applied, and this omission in the report, of course, throws out of consideration a large number of cases, many of which were reported as showing the danger to the mother in forceps operations. Again, it is probable that the many fatal cases of the application of forceps, tabulated in the various reports, are due to the high application of the instruments, since the low forceps operation is said by the best authorities to be harmless, an assertion which would be unwarrantable unless the deaths which are recorded after forceps were due to some other cause than the low application of the instrument.

Table VI. shows that the high forceps operation, in labors of 24 hours or less, is fatal to the mother in 30 per cent, a conclusion which is probably too favorable, since the cases were taken from Table III., and it is more than likely, as previously shown, that many of the mothers were saved by craniotomy in the eleven cases included.

As regards the child, we see from Table VI. that Cesarean section is 51 per cent more favorable than high forceps. But as craniotomy was done in eleven of these cases, it is impossible to tell the exact mortality of the children, since several of that number were dead before craniotomy was resorted to.

The percentage of children who died from the high forceps operation, therefore, lies between 58.6 per cent as a maximum, and 33.33 per cent as a minimum, being, in either case, considerably more serious in its results to the child than Cesarean section, which places the mortality at 7.4 per cent.

Before looking at the practical bearing of these statistics, a word should be said regarding the results obtained by Harris, as compared with those obtained by Table VI. Dr. Harris concludes his communication in the *American Journal of the Medical Sciences* by saying "that he believes it fair to estimate the result of timely operations at from 70 to 75 per cent of recoveries of both mothers and children."

Table VI. shows that 79 per cent of women and 92 per cent of children were saved by timely operations, *not by estimation*, but as a direct result, obtained from 29 cases, in which the labors were 24 hours or less, and under circumstances of which each reader may judge for himself. This difference is due, in a great measure, to the fact that the cases collected by Harris all occurred in the United States, where the operation is an unusual one; that several occurred many years ago, when the operation was very imperfectly known; that the operators in most cases had no experience in the operation; and that the whole number of "timely operations" was small (16 cases).

In Table VI., on the contrary, the cases are all of comparatively recent date, and many occurred in Germany, the operators being in several instances skilful surgeons, with great experience in the operation, and operating, too, in a country where Cesarean section is looked upon as a legitimate operation, and is not, as it were, done under protest.

The practical conclusions to be drawn from these tables are :

1st. If Cesarean section is decided upon, there should be no delay in its performance, since when done in labors of 24 hours or less it is 6 per cent more favorable than when delayed to 40 hours; and it seems equally true that when the operation is performed still earlier in the labor, still more favorable results might be hoped for, especially since the most favorable time is during the first stage.

2d. That the high forceps operation should be undertaken with the greatest hesitation, inasmuch as its results to the mother are more fatal than those of Cesarean section, while the prognosis as to the child is far better in the latter.

3d. When the question arises as to what operation will give the best chance to both mother and child, the choice must lie between Cesarean section and turning.

4th. That Cesarean section seems especially called for in cases of labor complicated by ovarian tumors, which can neither be pushed out of the way nor punctured, since Playfair found that about 50 per cent of the women died in such cases, when craniotomy was employed, whereas we find that Cesarean section gives nearly 80 per cent of recoveries of the women, to say nothing of saving 92 per cent of the children.

A CASE OF THE DOUBLE OPERATION OF OVARIOTOMY AND HYSTEROTOMY.

(WITH REMARKS.)

BY

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THE rarity of this class of cases and the interest attached to them in a diagnostic and therapeutic sense, lead me to report the following case:

A physician from a neighboring city visited Chicago, accompanied by a patient, to consult me about an ovarian tumor. The physician is a man of the highest standing in the profession, and of unquestionable integrity and honor.

The tumor had been first noticed about one year previous to my seeing the patient, and had grown more rapidly in the last six months. The diagnosis given by the doctor was easily verified, viz.: an ovarian tumor, most likely originating in the left ovary, and probably mono-cystic in character. The patient was an unmarried lady, twenty-three years of age, very modest in her demeanor, and as I was assured by my friend, of unblemished reputation. The cessation of the menses had occurred at an uncertain period, expressed by the term "several months since." Before visiting the city, her physician had proposed a vaginal examination, as one of the means of adding certainty to the diagnosis, but the patient begged so hard to be spared from what she regarded as a humiliation, that he was induced to yield to her wish. When I investigated the case, she shrank from it with so much earnestness, and very plausibly contended that it could not be necessary, as neither of us seemed to have any doubt as to the presence and nature of the tumor; consequently I too omitted this important means of diag-

nosis. At this interview it was determined that an operation could not be long postponed, and that as soon as arrangements could be made, I should remove it at her own home.

Accordingly, in about two weeks, I was informed that everything was in readiness, and the patient desired to be relieved at once. Upon my arrival, I met four physicians besides the attendant, and in their presence another careful examination was made, and as before and for the same reasons, vaginal exploration was dispensed with. All, however, seemed perfectly satisfied with the correctness of the diagnosis, and the necessity of an operation for the removal of the tumor.

Preparations were at once perfected; the patient etherized, placed upon the table, and an incision about three inches long in the linea alba exposed the sac. After assuring myself that there were no adhesions on the anterior surface, I introduced Spencer Wells' trocar, and drew off about twelve quarts of an amber-colored fluid. The fluid was thin, but somewhat viscid, presenting the appearance I had often witnessed in ovarian tumors. When the sac was nearly emptied, I noticed a tumor behind it, adhering to the sac and preventing it from passing out through the incision. The second tumor was elastic, and so perfectly resembled a secondary cyst, that I had no hesitation in plunging the trocar through its walls with a view still further to lessen the bulk of the entire mass by evacuating its contents. As the trocar met with unusual resistance, and nothing but blood passed through it, I became convinced that there was something unusual about it. The incision was somewhat enlarged, and, as much of the emptied sac drawn out as would pass, when it was discovered that slight adhesions, and not continuity of tissue, connected the two. After the cyst was entirely withdrawn, I was astonished to find that the second tumor was the impregnated uterus, and still worse, that it was wounded and bleeding. This revelation was accepted with many doubts by the physicians present, who were the friends and neighbors of the patient, and believed it impossible that she should be pregnant. The facts were so patent, however, as soon to overcome their incredulity.

At that moment I did not call to mind an almost precisely similar instance that had occurred to Mr. Wells, and could not recall a precedent for my guidance. The wound in the uterus had been very much enlarged by the contraction of the transverse, oblique, and longitudinal fibres of that organ, until in the few moments that had elapsed since the puncture, it had become as large as a silver dollar. It seemed to me, in the short time I had for reflection, that the only way out of the difficulty was to evacuate the uterus. This was done by making an incision about four inches long from near the fundus downwards, so as to include the accidental aperture. The incision exposed the placenta at about the middle of its attachment. This organ was easily and rapidly separated, by passing the index finger between it and the uterine walls, and completely removed. After this was done, the right side of the fetus, the arm, hip, and feet were perfectly exposed. The breech was seized and drawn

towards the opening, when the fetus was expelled by uterine contraction. The membranes and liquor amnii were next removed, when the uterus was perfectly devoid of all its former contents.

Gestation had advanced to about the middle of the seventh month. The fetus evinced no signs of life after its removal, and had doubtless died from the effect of hemorrhage from the wounded placenta.

The incision in the uterus was closed by interrupted sutures of fine silk, including the visceral peritoneum, the whole of the muscular wall, and the mucous membrane. The sutures were cut short, and no provision made for their removal. By the time the sutures were all inserted and tied, the uterus had contracted very firmly.

Thanks to the valuable aid afforded me by the gentlemen present (whose names for obvious reasons I dare not mention) there had neither blood, nor amniotic, nor ovarian fluids found their way into the peritoneal cavity.

In order to secure a free exit of the lochia from the cavity of the uterus, and thus prevent the danger of its passing through the wound, the os uteri was freely dilated with the finger, and a long flexible catheter left in it some hours. The pedicle of the ovarian cyst was tied with a double ligature of plaited silk, and returned into the abdominal cavity. The ligatures were brought out at the lower angle of the wound, and left long enough to hang down between the thighs. The wound in the abdomen was closed by interrupted sutures, and dressed with a thick layer of carbolized cotton batting. The only interest connected with the future progress of the case is, that there was not a disagreeable symptom, except a few trivial after-pains.

After the operation was concluded, I was consoled for my error in not making a vaginal examination, and consequent ignorance of the complicating pregnancy, by the assurance of all the gentlemen who assisted me, that their confidence in the chastity of the patient was equal to their reliance upon the faithfulness of their own wives, and that a suspicion of her purity would not be entertained by any one who was acquainted with her. Her complete recovery, however, and up to the present time her own entire ignorance that a fetus had been removed with the tumor, together with the preservation of her reputation, which could not have been done by any other course, fully compensates me for the chagrin I felt for all my shortcomings in the case.

I have purposely omitted names, dates, and places, to avoid the possibility of identification of the patient; I am persuaded, however, that this will not detract from the interest of the case.

As the subject and manner of closing the wound in the operations for gastro-hysterectomy is now under discussion, I would call attention to this part of the procedure. The entire absence of septic or inflammatory symptoms, I think, gives evidence that there was no escape of blood from the edges of the wound, or from the uterine cavity into the peritoneal sac, and

warrants us in assuming that the closure by sutures was judicious, if not the all-important condition of success. After the operation, it was quite apparent that a great change must take place in the relation of the edges of the incision in the uterus, to allow the least drainage into the peritoneal cavity.

The frequent occurrence of pregnancy during the growth of ovarian tumors is recognized by all experienced ovariologists, and is a subject for consideration in all instances where a diagnosis is to be made preparatory to the removal of the tumor. Under ordinary circumstances, the diagnosis of this complication is not very difficult, as the uterus lies anterior to or on one side of the tumor, so that its presence and contents are easily ascertained, but exceptional cases are sometimes found when the difficulties are sufficient to mislead an experienced and accomplished observer. Mr. Wells acknowledges mistakes in his own practice, and mentions the fact that Dr. J. Marion Sims fell into an error of diagnosis and did not discover the complication until the gravid uterus was exposed during the operation for the extirpation of the ovarian tumor. A considerable number of other cases might be cited in which mistakes of this kind have occurred. The probabilities are that more of these errors arise from insufficient scrutiny in cases where the diagnosis might be made, than from an entire impossibility to ascertain the true state of things. Our improved methods of examination, and more perfect knowledge in interpreting the phenomena of pregnancy, ought to secure us against errors of this kind in all but the very rarest combination of circumstances.

As the known cases in which the double operation of ovariectomy and hysterotomy has been performed are very few, I have collected all I could find with my limited means of research and will not apologize for reproducing them in a condensed form in this connection.

Mr. Wells publishes a case, alluded to above, in his well-known work on diseases of the ovaries, almost exactly like the one I have recorded. It was first reported in the *Medical Times and Gazette* of September 30th, 1865.

He had entirely overlooked the existence of pregnancy with ovarian disease, and after removing an adherent multilocular cyst of the left ovary, he felt what he thought was a cyst of the right ovary, —tapped it, and then found it was the gravid uterus. From this puncture two or three pints of bloody fluid escaped through the

canula, when the tumor became much less tense; and he says, on raising the tumor up, he saw the Fallopian tube passing from its upper part and thus he knew at once he had punctured the uterus. He says, "On withdrawing the canula, a soft, spongy, bleeding mass protruded, and on putting in my finger to push this back and examine the uterine cavity, the anterior wall of the uterus, which was very soft and friable, as it had undergone fatty degeneration, gave way along the middle line from the puncture (which was near the fundus) for an extent of from three to four inches down the body toward the neck. With very slight pressure a quantity of liquor amnii and a fetus of about five months escaped. I then easily peeled off the placenta from the inner surface of the uterus; the organ did not contract, and there was free bleeding from three vessels close beneath the peritoneum at the lower angle of the rupture in the uterus. These vessels were secured by three silk ligatures. Oozing still going on from the surface where the placenta was attached, I made a free opening into the vagina by passing my finger from above through the cervix and os, and then put a piece of ice into the uterus and held it within by firmly grasping the organ which then contracted. I then brought the peritoneal edges of the tear in the uterus together by an uninterrupted suture of fine silk, one long end of which I had previously passed into the uterine cavity and out through the os into the vagina. By seven or eight points the edges were brought accurately together, and the other end of the silk was brought out through the opening in the abdominal wall, with the ends of the three ligatures on the vessels in the uterine wall close to the pedicle, and were tied to the clamp." The patient completely recovered.

I am indebted to Dr. Mundé for the following very interesting case published in the *Australian Medical Journal* of February, 1875, by Thomas Hillas, M.R.C.S. Eng., of Victoria, Australia.

"Mary M'C., aged twenty-four years, single, was admitted to the Ballarat District Hospital, 4th June, 1872. The history of her case was peculiar. She believed that she became pregnant in March, 1871, and, not wishing to be confined in the district in which she lived, she sought admission to the lying-in ward of the Ballarat Benevolent Asylum. She was admitted there in November, 1871, and after staying there until the following June, a consultation of the honorary staff was called, and she was discharged, her case being deemed ovarian dropsy, and not pregnancy. On her admission to the hospital she was examined by the resident surgeon, and subsequently by the honorary surgical and medical staff, all agreeing that she was suffering from ovarian dropsy, and that it was a suitable case for operation. On 13th June, assisted by the honorary surgeons, Messrs. Nicholson and Whitcomb, and the resident surgeon, Mr. Owen, and the honorary medical staff, the patient being under chloroform, I commenced the operation, by an incision midway between the umbilicus and pubes. On arriving at the

peritoneum, I made a small opening into it, when out spurted a large jet of venous blood which the pressure of the finger controlled. I came to the conclusion that I had wounded, unwittingly, a gravid uterus, and, feeling sure of this, I extended the first incision upward to the umbilicus, when a large uterus rolled out on to the thighs, and the ovarian sac protruded. This was tapped, and about eleven quarts of fluid were drawn off; there were but few adhesions, which were easily broken down, and there was no hemorrhage. The sac contained about a dozen small cysts, but, the external wound being large, there was no occasion to tap them. The pedicle was short and thick, and, after being tied firmly with a double whipcord ligature, the clamp was securely applied, and the pedicle divided, the ends of the double ligature being tied over the ends of the clamp. Now came the difficulty. The uterus was all this time lying on the thighs, with a fetus in it, and a wound through its muscles, probably into the placenta. Some of the bystanders advised that the wound in the uterus should be sewn up, and that organ replaced in the abdomen; but seeing that labor must come on soon, and that the rupture of the uterus would most likely occur at the seat of injury, I personally decided to perform the Cesarean operation, as being the most likely means of giving the patient a chance to recover. The uterus was incised to about five inches, and the placenta and a fetus, alive and well developed, at about the eighth month of gestation, extracted. I then stitched up the wound in the uterus with about nine or ten silver-wire sutures, carefully tucking the cut ends down into the incision. Immediately on completing this the uterus contracted firmly. I then sewed up the wound in the abdomen with deep and superficial stitches, the deep stitches including the peritoneum, leaving the clamp at the lower margin of the wound, and a good deal dragged upon. The right ovary was the one affected, and the patient measured sixty inches round the abdomen before the operation. The sac and its contents, after removal, weighed thirteen pounds, and are preserved in the hospital dispensary. The patient vomited for about forty-eight hours after the operation, having been an hour under chloroform. This was relieved by morphia and ice, and on the fourth day all unfavorable symptoms abated. There was a discharge of pus from the lower portion of the wound, which ceased in about a fortnight, and then completely healed. She was discharged, cured, at the end of six weeks. On the 3d July, a month after the operation, she menstruated moderately for four days, and again on the 28th of August. I have seen her several times since, and she is in perfect health."

Dr. Mundé also kindly sent me the following three cases which, although not exactly corresponding to the cases already reported, will doubtless be of interest in this connection. The chances of saving the lives of the patients would undoubtedly have been increased, if the operator had, in the first case, removed fetus and tumor, instead of leaving both untouched,

and in the second, the tumor as well as the child. They will serve as a warning to others not to commit the same error.

Dr. Erskine Mason reported to the N. Y. Pathological Society in 1877 the case of a patient, 30 years of age, single, who entered Roosevelt Hospital July 30th, 1877. Since 18 months increase of abdomen, the circumference of which at umbilicus measured 39 inches. A vaginal examination showed the uterus high in the pelvis and movable. Distinct fluctuation in abdomen, area of flatness not changed by position of patient. Diagnosis of ovarian cyst confirmed by one of the most expert ovariectomists of New York City. Ovariectomy was considered indicated. On opening the abdomen a cyst appeared, which was opened by the trocar and 8 ounces of fluid evacuated, when this cyst was found to be the pregnant uterus. The trocar wound was closed by sutures and the abdominal wound also united. Patient gave birth the next day to a 6 months' fetus. Death of collapse 18½ hours after operation. Autopsy showed large multilocular cyst of left ovary. Uterus well contracted; no peritonitis.

Of the second case, Dr. Mundé says: "I have looked over Olshausen's recent work on "Diseases of the Ovaries," and found mention of only one case of Cesarean section complicated with the presence of an ovarian tumor. The operator was Kob of Stolp, in North-Germany; the original article appeared in the Transactions of the Berlin Obstetrical Society for 1873: *Beiträge zur Geburtshülfe und Gynäkologie*, vol. II., p. 99. I have this work, and abstract the case briefly as follows:

Patient 40 years; had four children, pregnant near term with fifth. Found pelvis occupied by a dense fluctuating tumor, preventing entrance of the head. The patient was much debilitated by this presumably ovarian growth. Finding the passage of the child impossible through the normal pelvis, the tumor was punctured per vaginam, but only thick colloid mucons flowed out in small quantities, even after enlargement of the puncture with the bistoury. Finally the Cesarean section was performed, the child extracted alive, and continued to live. The wound was closed by thread sutures, and death followed on the third day, probably from septic peritonitis. The cyst was not removed, although special mention is not made of the necessity (the author probably looked upon it as malignant, as colloid tumors were formerly so regarded, and, therefore, thought its removal superfluous); but he states that after the operation colloid matter still escaped from the vaginal puncture. The operation was performed January 17th, 1873."

The third case was reported by Prof. Lahs, of Marburg, in the *Deutsche Med. Wochenschrift*, Feb. 2d, 1878.

L. was called to a pluripara in labor presumably eight days; found abdomen much enlarged, fluctuation all over; firmly adherent cyst of left ovary filling pelvic cavity and obstructing delivery. Cesarean

section; three silk sutures in uterus; cyst too firmly adherent to be removable. Death from collapse in twenty-four hours.

In this case no blame can be attached to the operator for not removing the tumor, the firm adherence of which to the pelvic cavity, and the prostration of the patient from her long labor, rendering so severe an undertaking unjustifiable.

Mr. Wells says, with reference to the question, "What should be done when a pregnant uterus is discovered during some stage of ovariectomy? Let it alone." "But supposing the operator has penetrated the uterus or wounded it? If any conclusion can be drawn from the case in which I made this mistake, and emptied the uterus, and two other cases, in which the same mistake was made by other surgeons who did not empty the uterus, but closed the puncture in its walls by wire sutures, and both patients died after aborting, while mine recovered, it would seem to be the safer practice to empty the uterus."

The soundness of this teaching must receive the sanction of common sense, and is happily confirmed by the result of these two additional cases, one published by Mr. Thomas Hillas, of Victoria, and the present one by myself. It will also be noticed that the treatment of the wound in the uterus and the manner of closing the incision in that organ had an important bearing on the subject in all three of these successful cases. Mr. Hillas closed the wound with interrupted silver sutures, Mr. Wells with an uninterrupted silk suture; while mine was closed with interrupted silk sutures. From what I could see of the more immediate effect, as well as from the final result, I cannot doubt that this procedure had much to do with the recovery of my case. Although Mr. Hillas makes no mention of his having secured a free exit for the discharge from the uterus by dilating the cervix, it is to be presumed that he did not neglect this precaution. Mr. Wells passed his finger down from the cavity through the cervix and os, while in my case I opened the cervical cavity with a large catheter. I think it is but fair to state that while these three cases were treated so essentially alike by all of the operators, neither of them was aware that there was any precedent for it. I certainly did not remember Mr. Wells' case at the time I operated, and I believe Mr. Hillas, like myself, had overlooked it.

A CONTRIBUTION TO THE MECHANICAL TREATMENT OF
VERSIONS AND FLEXIONS OF THE WOMB.

BY
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(With five woodcuts.)

It is no longer a question that a retroversion or a retroflexion, an anteversion or an anteflexion, or a lateroflexion or a material displacement of the womb in any respect, is the cause of a greater or lesser degree of pain and discomfort, a disturbance of the system generally, and a greater or lesser degree of derangement of the general health. These are incontrovertible facts. The question on this basis arises, Is such a state of things remediable? If so, how and by what means? Surgeons and inventors of mechanical appliances have answered that to a greater or lesser extent they are, and have certainly not been wanting in their exhibitions of remediable display.

The object of the present article is not to go over the whole ground of the etiology, the pathology, and the therapeutics of uterine displacements. Incidentally they may all be referred to so far as to serve a purpose. It limits itself in the main to those displacements above enumerated, and proposes an inquiry into their corrections or treatment by mechanical means.

As a preliminary to such an investigation, it would seem desirable that we especially refresh our memories with regard to the natural uterine supports. The uterus is sustained in its lateral aspect by musculo-cellular processes which spring from the sides of the womb, and between folds of the peritoneum join the sacro-iliac symphysis and its neighboring region. These folds with their contained processes constitute the broad ligaments. They not only sustain the womb laterally, but furnish one of its chief supports in its posterior aspect, sustaining it in an upward and backward direction. Remembering the points of the sacro-iliac symphysis and the mean situation of the womb in the pelvis, it will be seen that the broad ligaments act on lines drawn from the symphysis to points situated about one inch on

either side of the symphysis pubis. These lines would intersect at about right angles. The long axis of the womb would also cut the plane of these angles at about right angles, and we would thus have the body of the womb, when the person is in the upright position, suspended, as it were, in the right angle of the broad ligaments, lifting upwardly and backwardly in a direction of about 35 degrees to the perpendicular. Of course, these ligaments are not supposed to be in a state of tension while thus acting. While admitting of a considerable sweep of the fundus of the womb on either side of its mean position, the resultant of their general antero-posterior action is, however, as above described. The broad ligaments, therefore, sustain laterally, upwardly, and posteriorly. The womb is further supported in its posterior aspect by musculo-cellular processes passing off from the cortex of the womb near the junction of its neck with its body, and also from the posterior-upper portion of the vagina, which, being enveloped in peritoneal folds, separate on either side of the rectum and pass backwards and upwards, losing themselves in the sub-peritoneal connective tissues in the region of the lower lumbar vertebræ. These are the utero-sacral ligaments. In the erect position, in addition to their backward binding, they exert a specially suspensory action, and that, too, in an almost perpendicular direction. Of all the uterine supports these are the most concerned in resisting the gravitation of the uterus and pressure from superincumbent organs. Being attached to the sacral curve, they also furnish the principal resistance to the tendency of the uterus towards the pubis. They thus sustain the womb by both a lifting and a retro-binding power.

Some consider the spermatic nerves and vessels which go to the ovary, enveloped as they are in the folds of the posterior portion of the broad ligament, as contributing materially to uterine support, and they have been named the posterior round ligaments.

In its anterior aspect, the womb is supported towards the pubis, 1st, by what are termed the anterior round ligaments. These are muscular processes from the upper, outer and anterior portion of the womb which, under the protection of the anterior peritoneal folds of the broad ligaments, curve forwards and, after passing over the bodies of the pubis, lose themselves in

the tissues of the pudendal sac. They are chiefly called in action when the womb has a tendency to retroversion. 2d, by the connective and muscular tissues which join the cervico-corporal region of the womb to the bladder. These are the utero-vesical ligaments. They subserve the purpose of holding the uterus towards the pubis and preventing undue displacement towards the sacrum. The fulfilment of these functions depends upon the fact that they are attached to that portion of the bladder which is on an almost straight line between the cervico-corporal junction of the uterus and the lower border of the pubis, and upon the further fact that the bladder in its anterior aspect is attached to the pubis by muscular and aponeurotic tissues. Add to this the fact that the anterior wall of the vagina is joined by connective tissue to this portion of the bladder nearly its whole extent, and also that this portion of the bladder, in consequence of the entrance of the ureters and the ridges and dense floor of the trigonum vesicæ, is both firmer in structure and more firmly fixed than any other portion of the whole organ, and it becomes apparent that this line of uterine ligamentous support is a very important one.

In their function, it is plain that these ligaments antagonize the utero-sacral; while acting in conjunction, they constitute a sort of swinging hammock between the sacro-lumbar region on the one extreme, and the pubic symphysis on the other; holding the uterus and bladder above and suspending the vagina below.

Hitherto the antipodes of the utero-sacral ligaments have been limited to the utero-vesical. But if the utero-sacral ligaments appropriately derive their appellation from the extreme and fixed points of their attachment, there seems an equal propriety in grouping the utero-vesical, the vesical, and the vesico-pubic ligaments together, and terming this line of connection and suspension the utero-pubic ligaments; for certain it is that the utero-vesical alone without the other would afford little or no antagonizing force to the utero-sacral.

It has been maintained that the abdominal cavity affords a lifting or sustaining power to the uterus. I am as yet unconvinced of the truth of this position. But do not the bladder and uterus move up and down with every respiration? Yes; and does not that therefore prove "that the abdominal cavity

exerts upon the uterus a peculiar retentive power?" No. In the act of inspiration, the diaphragm flattens, and in so doing pushes before it and out of natural quiescent position the organs below it. In the act of expiration, the diaphragm arches and allows the organs below it to go up and back to their natural position by means of their ligamentous resiliency. Every one knows by his own experience that the act of inspiration, as compared with the one of expiration, is an effort—an effort characterized by a longer duration and a greater exertion. The act of expiration is accompanied by no feeling of exertion; it is performed by the inherent and natural resiliency of lung tissue and the thoracic muscles concerned in respiration. During its performance and at its close, for a moment a feeling of relief from a previous effort is experienced. The system as a whole is momentarily at rest. But it is at this very moment that the diaphragm is arched and at its highest. Now is it reasonable to suppose that at this very time it is lifting and sustaining the whole abdominal viscera on the principle of a pistonlike suction action? Would not such an effort be extended to and experienced by the system, as well as that of inspiration? The fact that at this precise moment the system as a whole is pervaded by a feeling of rest convinces one that all the abdominal organs are in the places where their peculiar supports and attachments naturally and instinctively put them. I, therefore, while admitting abdominal influence in depressing the pelvic organs, the uterus among them, through the act of inspiration chiefly, feel compelled to exclude it from the sustaining and retentive powers of that organ.

As we have now in brief reviewed the natural supports around and above the womb, let us turn our attention for a few moments to the supports below the womb. These may be grouped as the muscular pelvic floor, the sacro-sciatic and perineal ligaments, the perineal septum, the perineal muscles, the vagina, the perineal body, and areolar tissue. The areolar tissue permeates all of the hitherto named uterine supports; it intervenes between the anterior vaginal wall and base of the bladder, between the posterior vaginal wall and rectum; it attaches the vaginal lateral walls to their corresponding pelvic lines; it honeycombs the ischio-rectal fossa, filled with its fat; and thus furnishes a firmness and strength to the pelvic holds which they otherwise could not possess.

The muscular structures directly concerned with the pelvic floor are the ischio-coccygeus, the obturato-coccygeus, and the pubo-coccygeus. These muscles, by their contiguity and fan-like expansions, make an almost continuous sweep from the coccyx as a point of departure, over the lower pelvic region, from the tuberosity of the ischium to the symphysis pubis. These, with the sacro-sciatic ligaments, furnish an almost uninterrupted floor to the pelvis. Of these muscles, the one which most concerns us in regard to the subject under consideration is the pubo-coccygeus. This muscle arises from broad attachments to the posterior aspect of the pubis on either side of the symphysis, and is inserted into the sides of the last two bones of the coccyx. In its course across the pelvis, bands of its fibres in proximity to the median line switch off, and curve around either side of the vagina, and meeting, unite in its posterior aspect; other bands again curve around and unite behind the rectum. Considered in regard to its osseous attachments, it will be seen that when this muscle is in contraction, it both lifts and approximates the rectum and vagina laterally, or from their sides towards the median line. As regards its curving bands behind the rectum and vagina, they must necessarily both constrict and carry those organs forwards towards the pubic arch. Especially is this the case with the vagina, because of the larger size of the embracing muscular band. Like a jugum, it draws it upwards and towards the pubic arch. It embraces the vagina immediately behind the perineal septum, which, in reality, is the vagina's mouth expanded to its osseous attachments. It is thus seen to be, par excellence, the sphincter or constrictor muscle of the vagina.

Below and outside of the pelvic floor which we have just been considering, are the ligaments, muscles, aponeuroses, and elastic tissues which go to make up the perineal support generally. In consequence of their intimate relationship, it is perhaps as well to group the vagina with them. The vagina is a musculo-membranous tube, remarkable for its extreme dilatability. It is no more nor less than a tubulo-muscular process given off from the womb at its cervix, and its lower open extremity is fixed to the rami of the pubis and the ascending rami of the ischium. "The muscular wall of the vagina is not separable into coats or layers. Two-thirds of the thick-

ness of the vagina, varying from two to three lines above to five to six below, is made up of the muscular portion; the inner third consists of a dense cellular lining membrane, inseparably united to it. Elastic elements everywhere pervade this musculo-membranous structure, forming an enormously dilatable channel of communication between the external genitals and the uterus." The vagina may fitly be represented as a sort of cecum, with the cervix uteri let into its upper wall near its blind extremity at nearly right angles to it. From the upper sides of its closed end are given off flat muscular processes, which join similar processes from the posterior surface of the womb, and with them enter the broad ligament. Muscular fibres are also given off from near the same locality, which join and constitute a portion of the utero-sacral ligaments. We thus see that by these two sets of muscular processes, the blind extremity of the vagina is supported in such a manner as to tend to keep it extended in a latero-longitudinal direction. The open extremity, after passing through the pubo-coccygeus muscle, by which it is constringed to a narrow ring, suddenly flares from its longitudinal axis, and laterally goes to join the inner edges of the ischio-pubic rami. Its upper border joins the sub-pubic ligament. Its lower border stretches across the perineal space just above the ischial tuberosities. This arrangement constitutes the perineal septum. This septum is composed of two aponeuroses—an anterior and a posterior one, embracing muscular fibres between. The latter make the deep transverse perineal muscle. By the union of the two aponeuroses at the lower border with the two layers of the superficial fascia, that strong resisting band is constructed which is called the ischio-perineal ligament. This ligament, with the deep transverse perineal muscle, may be considered the foundation and bulwark of the perineal body. This body, which may be regarded as the rendezvous of the principal structures of the female perineum, occupies a space between the anus and the posterior vulvar commissure as a base, and extends upwards in wedge-like pyramidal form between the vagina in front and the rectum behind, to a point where these two organs join. It is made up of the termini of the deep transverse perineal muscle and the ligamentum ischio-perineale, just described, the superficial transverse perineal

muscle, the anterior extremity of the superficial sphincter ani muscle, some of the inner fibres of the ischio-coccygeus muscle, all of which meet about its centre, and "become as it were fused together by a great accession of elastic tissue, without altogether losing their identity. The result is a body in structure at once highly elastic and resistant."

Thus structured and admirably supported by a chain of antero-posterior muscles from pubis to coccyx, and by deep and superficial transverse muscles and ligaments from ischium to ischium, we can fully comprehend the office which the pyramidal body fulfils. It is no less than, 1st, efficient support to the lower third of the walls of the vagina. It thus comes to the aid of the pubo-coccygeus muscle and the deep sphincter or constrictor vaginae, by assisting them in pressing the vagina tightly upwards towards the pubic arch and fundus of the bladder. 2d, it affords a firm pedestal to the thick tubular column which the vagina is, and thus naturally assists the muscular processes of that organ which enter the utero-sacral and broad ligaments, whose function in part, we saw, is to keep it longitudinally distended; and, 3d, in thus supporting the vaginal column, it furnishes appreciable aid in keeping the cervix uteri in its natural position.

As regards the shape of the cavity of the vagina (an all-important item in shaping a pessary) we see that the posterior vaginal wall must in its longitudinal aspect, from cul-de-sac to ostium, take on a double curve or the curves of Hogarth's line of beauty.

Lastly, the uterus is a support to itself. Composed as it is of muscular fibres and connective tissue, running in almost every direction and enmeshing themselves with one another, condensing into an inner and an outer cortex with a trabecular network between them for greater vascularity, it will be seen that its own peculiar structure, when in the normal condition, is eminently fitted to maintain the natural relationship of one portion of its body with another, and the body as a whole with the cervix.

With this terse and imperfect glance at the natural uterine supports, we now turn our attention to some of the artificial ones already in use and some indicated for use in the future. The object of pessaries, of whatever form or nature, is in all

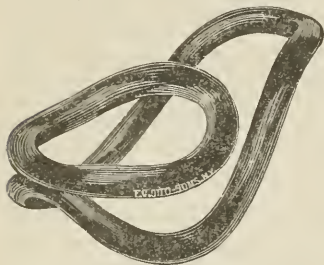
cases to restore the displaced womb (and sometimes vagina) to its originally normal position and condition. The arena on which we figure in order to accomplish this is chiefly the vagina.

We will consider first the displacement of *Retroversion*. The acute variety is, of course, excluded as not coming within the scope of our subject. Without going specially into the etiology of this condition of things, or the pathological condition of the womb, we find, as a rule, the following disagreeable and painful symptoms which call for explanation and relief. Tilted over as the fundus is against the rectum in the hollow of the sacrum, with the cervix brought forward and pressing against the neck of the bladder, vesical irritation is in some instances, though not always, the result, together with constipation, congestion, and tenesmus of the rectum. It is also attended with a dragging, bearing-down feeling, as if something must come away from the genitals. There is a fixed, almost unyielding pain low down in the back, and a sore tenderness experienced in walking, especially when walking fast and with jarring missteps. The rectal and vesical troubles are self-evident as to cause. The dragging, bearing-down feelings are, I think, referable to the fact that the anterior round and utero-sacral ligaments are put upon the stretch, coupled with the fact that in the majority of cases the womb is lower in the pelvis, and is prolapsed to a greater or lesser degree in the vagina. The pain and tenderness experienced in walking are, I believe, produced by a squeezing, cramping process on the part of the bladder in front and the rectum behind, acting against the fundo-cervical ends of the womb. Of course, the areolar hyperplasia and the endometritis, which are often found to accompany this condition, contribute much to the soreness and pain which are directly caused in the manner above named.

The indications, it would seem, are plain—they are to rectify the displacement and keep the womb in natural position. Having repositied that organ by some one of the many means in use, the next thing to do is to decide upon some properly fitting and efficient mechanical appliance. Keeping in remembrance the Hogarth's curves of the posterior walls of the vagina and the lateral approximation of its sides by the

pubo-coccygeus muscle, we naturally select out of the many pessaries in use the Albert Smith pessary, as the one best adapted to fulfil the indications, and the one most easily worn. But in choosing this pessary, it is necessary to bear in mind certain qualifications. 1st, it must be long enough, and only long enough to carry the cervix backwards beyond the centre of gravity, when the patient is in the erect position, in order that the fundus may tilt forward and take the strain off the round ligaments. (And here let me remark that all retroversion pessaries should prospect their purpose from the stand-point of the erect position, and all anteversion pessaries should equally do so from the stand-point of the reclining or supine position.) 2d, its posterior or long curves must be such as to carry the posterior cul-de-sac of the vagina well upwards (and by so doing carry with it the cervix), so as to take off the strain on the utero-sacral ligaments. 3d, the same curves in their anterior aspect must be such as to accurately fit the perineal body, so that they may rest upon it as on a chair. 4th, the anterior-short tip curve must be such as to bear equally and gently against the anterior wall of the vagina just behind the pubis—this point being the one where the pessary in front antagonizes the posterior vaginal cul-de-sac by its bar behind—the middle of the lower or posterior wall of the vagina acting as a fulcrum. If the long curve of the pessary be too great, these antagonizing points will produce discomfort; if too little, the indications will not be so well fulfilled, and the tendency to expulsion of the pessary will be greater. 5th, the pessary, as a rule, should be narrow, and especially so at its anterior end, so as to avoid stretching the sphincter vaginæ; the retention of it depending not so much upon the lateral grasp of the sphincter as upon the vaginal curves, the nice adjustment of the pessary curves to them, and the antagonizing points before mentioned. In most cases such a pessary is all that we could desire. But it is not unfrequent that we have a retroversion with a large vagina having atonic and relaxed walls, and with the utero-sacral ligaments elongated and the womb almost, if not quite, in the second stage of prolapse. Here such a pessary fails at times, because of the extremely relaxed condition of the posterior cul-de-sac; its bar carrying upwards and backwards the cul-de-sac, but not

the cervix. This inefficiency in the pessary I have sought to remedy by causing a ring to be fixed to the bar, slightly curved antero-posteriorly, and elevated about half an inch above the arms of the pessary. The accompanying cut will give the idea of the instrument.



Retroversion Ring Pessary.

In its action the ring catches the cervix in its anterior aspect and aids in carrying it back by bearing upon it, where before the bearing was limited to the bar upon the vaginal cul-de-sac. It is now *pushed* from before backwards, where before it depended upon being *pulled* in the same direction. But something more is accomplished than this. The womb is not only restored to its anteverted position, it is raised in the pelvis, and thus the dragging strain is removed from the lifting supports generally. It also meets another trouble. In such cases as that under consideration, after the womb has been anteverted, it now falls forward beyond its normal position or angle. Here the ring, both by lifting the womb up into its place between the bladder and rectum, and by grasping the cervix in its embrace, holds it in position much as a pear would be held with its small end engaged in a ring. But there is a condition in which neither the Smith pessary nor its ring modification will accomplish good. It is where the utero-pubic ligaments are naturally very short or have become so by disease or by disuse from long-continued retroversion. This condition must first be removed by a stretching process. This can be done in two ways: 1st, by the probe stretcher; 2d, by the pessary stretcher. The first is simply a curved sound with a projection of a third or half inch from the curve, about one and a half inches from the end. This makes a sort of a fork in which the posterior lip of the womb is caught and by it also the sound is prevented from passing to and against the fundus. The second is a Smith pessary with a tongue sound hinged to its anterior tip, having this same curved forked shape. This can be introduced and worn for twenty-four hours with more benefit than can be derived by weeks of probe stretching.

Again, there is a condition in which neither the Smith

nor its ring modification will do any good. It is where the junction of the vagina is so low as to admit of no cervical projection, and because this state of things is almost invariably associated with a short vagina. The pessary does not fail because of the short cervix per se, but because of the fact that the short vagina accompanying it prevents it from carrying the cervix beyond the centre of gravity. I maintain that the transverse bar of a retroversion pessary does not go up behind the womb to hold it in position by pressure against the womb's back. It does its good mainly upon the basis and principle of gravity, and to aid it in this work it is excellent practice to put the patient in the semiprone or knee-breast position upon the introduction of the pessary, and also to have the patient go through this posturing with the admission of air to the vagina every night upon retiring, and to lie as much as possible in the semiprone or side position.

There is still another condition of the vagina which often militates against the use of the ordinary retroversion pessary. It is when there is loss of the perineal body. This lesion is one of degree. In many and perhaps most cases of laceration of the perineum enough of the structure of the perineal body remains, in conjunction with the sphincter vaginæ, to retain the pessary. But when the perineal body is completely severed and the sphincter is stretched and lax, and if especially there exist in addition a sub-involute vagina with a tendency to rectocele, we can place but little if any dependence upon an exclusively vaginal pessary. In such a condition relief is sought in one of two ways—1st, by surgical procedure, and, 2d, by mechanical support having its sustaining point outside of the vagina. As to the first, there is no division of opinion in regard to its propriety and even demand in the majority of cases. But it is too often the case that patients will not submit, and in some instances the operation is not advisable, and then we are obliged to fall back upon some device of an externo-internal support, between the annoyances of which and the troubles of the displacement there is but little to choose. These externo-internal contrivances are sometimes tolerated by the superannuated, the altogether miserable and inactive; but for the comparatively young and active I have yet to find an instance where they are endured for longer than a very short period.

And there are the most cogent reasons why this should be so. The so-called fixed support for these appliances is a belt around the waist. This belt is on a plane that cuts the spinal column about the second lumbar vertebra. It is, therefore, situated above the base of the sacrum the distance of four lumbar vertebræ, or some five or six inches. The forward and backward flexions of the spinal column in the different posturings of the body upon the sacrum as a pivotal point embrace an angle equal at least to one-sixth of a circle. Now, making all allowances for deficiencies of a perfect segment of a circle in the contour of this dorso-perineo-abdominal track, a line extending from the belt-plane through the base of the sacrum to the perineum would, in sweeping over the angle above mentioned, pass over a segment of this track in this perineal region of considerable extent. A perineal band, therefore, attached to the belt antero-posteriorly, must necessarily be subjected to a to-and-fro movement corresponding to the antero-posterior movements of the spinal column. As a practical test, let any one try the experiment of putting on the belt and perineal band. He will find that, as he bends from an erect to a stooping position sufficient to pick up an object from the floor, the band will rub backwards over any point in the perineal region the distance of at least an inch. My conclusion, therefore, with regard to belt and perineal band pessaries is, that, what with their stretchings and chafings of the perineum, their varying point of support, and the consequent punchings of the womb and the fornices of the vagina, the patient is environed by anything but a delectable state of things. The best comment is that sooner or later she ferociously kicks against them.

Anteversion. A slightly anteverted womb needs no treatment. But when the fundus falls forward to such a degree as to come in contact with the base of the bladder and the anterior wall of the vagina, then pelvic pains and discomfort are propter-hoc consequences, and treatment is called for. In almost all cases of decidedly anteverted wombs the organ is enlarged and heavy. This enlargement and weight may be due to a fibrous growth, chronic engorgement, or areolar hyperplasia. It is generally tender and sensitive. The disturbances generally attendant upon this displacement are sacral and lumbar pains, irritation of the bladder, tenesmus of the rectum,

dragging from the hips, and a feeling as of a weighty ball in the pelvis. These symptoms are explainable by the facts that the broad ligaments are dragged forward and put upon the stretch, the utero-pubic ones are drawn tensely backwards, the rectum is pressed upon by the cervix, the bladder is invaginated and pressed upon by the fundus uteri, and, as in retroversion, the uterus itself is pinched and cramped in its long axis by the rectum and bladder. Of all the discomforts accompanying this displacement, I believe the greatest to be due to this latter cause. The indications are, of course, to rectify the displaced organ and keep it rectified. How is this to be done? Our resources are chiefly confined to modifications of the utero-pubic ligaments. If we can shorten them, the cervix will be drawn forwards, the fundus will recede, and our work is done. Leaving out of view the surgical operations proposed, but of little benefit—what we want is some mechanical appliance which will make gradual and unirritating pressure upwards against the anterior wall of the vagina just back of the pubis, and so shorten the utero-pubic distance. Unfortunately we cannot bring to our aid here the benefits of gravity as in retroversion while the patient is in the erect position; but we do get it in the reclining one. In addition to the mechanical support in this displacement, great advantages can be derived from appropriately posturing the body. When retiring at night and when in night-dress, let the patient lie upon her back, place her feet upon an ottoman close to the buttocks, raise her abdomen to a line drawn from her knees to her shoulders, and while in this position for a few moments, let her manipulate her bowels upwards as we do in cases of hernia. This causes the abdominal and pelvic viscera to gravitate upwards and backwards, and the anteverted womb, especially when aided by its artificial vaginal support, partakes of the gravitating action and rotates backwards on its transverse axis. After this manœuvre she should lie upon her back as much as possible through the night. As the posturing assumed for cases of retroversion has been termed the “knee-breast position,” I think that an appropriate title for the above posturing in cases of anteversion is the “*feet-shoulder position*.”

There have been many attempts in the direction of a suitable and efficient anteversion pessary. Hewitt's was a step in

the right direction, and with some modifications of its present form can be made an efficient one. In its present shape, the knee bears directly against the cervico-corporeal junction, instead of lifting the cul-de-sac upwards and forwards towards the pubis, as it should do. The earlier anteversion pessary of Thomas is faulty in that it antagonizes vaginal action in such a way as to neutralize in a great degree the object sought. I refer to his modification of the Smith pessary by a bow spanning the arms. Such a pessary distends the vagina longitudinally as well as transversely, and the cervix stands proportionably still. But Dr. Thomas' later anteversion pessary is free from this fault and seems to me to be a happier effort. I refer to his hinged anteversion pessary which, when closed in the vagina, is quite short and occupies no portion of the posterior cul-de-sac, and which, by its pitcher-mouth projection slanting pubic-wards, is admirably calculated to do its intended work. But I find objections to the above-mentioned pessaries, 1st, in that neither of them admit of any graduation in their pressure except in the use of different sizes; 2d, in that they need considerable preparatory treatment of the vagina before they can with safety be employed. No part of the vaginal canal is so sensitive to local displacement as the anterior wall between the cervix and the pubis. In consequence of a fixation, as compared with any other portion of it, of the anatomical structure of the fundus of the bladder and its attachment to the pubis, of the tension in this region caused by the anteversion and heightened by the shortening of the utero-sacral ligaments, we have to deal with a part that demands gentle and gradual approaches, or otherwise trouble in the way of actual pain and even a solution of continuity is liable to follow. To meet the demands of such conditions and to obviate the above objections, I have devised an anteversion pessary which in my hands has done good service and which I think fulfils the indications as well as any with which I am acquainted. It is simply a Smith pessary fully one-third shorter than those of the ordinary length, and that third of which it is minus is the posterior, leaving the other two-thirds with the usual curves; armed with a short curved tongue acting at the anterior extremity of the pessary on a hinged joint and tipped with an olive-shaped cross bar. Across the arms of the pessary is sprung a band of

india-rubber on which the tongue rests for support. By sliding the band towards the tip of the pessary, the tongue is made to rise, and by sliding it towards the large end it is made to fall. Thus it is capacitated to make a gradual sweep from nearly a level with the arms of the pessary to almost a perpendicular. The annexed cut explains the instrument.

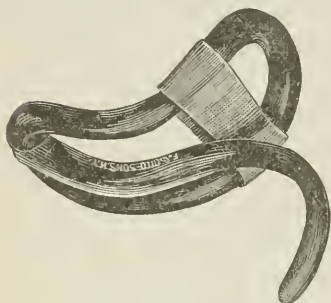


Anteversion Pessary.

The instrument is easily introduced with the tongue depressed upon the elastic band, and when within the vagina it adjusts itself, the rubber band causing the tongue to spring up against the anterior vagina in the post-pubic space, and the large end of the pessary to be depressed against the posterior wall. The shortness of the instrument permits longitudinal shortening of the vagina, and thus the cervix is allowed to be drawn forwards. Rotating as the tongue does on the anterior tip of the pessary, as the centre of its sweep, its upward bearing is always towards the pubis. By beginning treatment with slight elevation of the tongue, no preparatory measures are needed. It is easily removed by the patient, and with a little instruction is easily introduced by her.

But there are conditions of the vaginal parts in which neither this nor any other exclusively vaginal pessary will be of service. If the perineal body be largely gone, the vagina lax, the womb large and heavy, with a tendency to cystocele, we need something more efficient. Something over a year ago, I originated a peculiar pessary to meet, if possible, these wants. It is an oblong, elliptical vulcanite, with one curve in its longitudinal axis, with a long tongue hinged to its posterior transverse bar, curved so as to adapt itself to the posterior vaginal wall, terminating in a hook-like curve, intended to curl around the perineum as an anchoring point. Across the arms of the pessary is sprung an india-rubber band. The tongue lies beneath the band, and is its support in the upward direction. By sliding the band along the arms of the pessary in an anterior or posterior direction, the anterior bar of the pessary can be depressed or elevated to any desirable point.

The anterior bar is, of course, intended to bear up against the anterior vaginal wall behind the pubis, while the anterior arms rest against the pubis. The india-rubber band puts them there, and the hook of the tongue around the perineum prevents the sliding of the pessary up the vagina, and so the bar is held in its place. By curving the arms near the anterior



Anteversion and Cystocele Pessary

bar suddenly back, a broad base is presented to the fundus of the bladder, and in cystocele it is made the most efficient support of which I know. The only objectionable feature about the pessary is the projecting tongue around the perineum. Patients do not like anything projecting from the vulva. But choosing the lesser of two evils, they bear the annoyance willingly in most cases where it is absolutely needed. The cut above will aid the reader in forming an idea of it.

Flexions. These are anteflexions, retroflexions, and lateroflexions. Again they are divided into corporeal flexions, cervico-corporeal flexions, and cervical flexions. The prevailing flexions of the womb, viz.: anteflexions and retroflexions, are intimately related to their corresponding versions. The simple fact that in the vast majority of cases these flexions are accompanied by a greater or lesser degree of version, would go far to show that either they as independent conditions are referable to a common cause, or that one condition having been produced by the cause, held an immediate causal relationship to the other. There is no doubt in my mind that the great majority of flexions are produced by mechanical causes, and that in by far the largest percentage of cases they are preceded by versions. The first step is a giving way of some of the uterine supports; the second, by gravity, superincumbent pressure, posturing, or lifting is a backward or forward inclination of the womb; and then begins that pinching, cramping process between bladder and rectum, spoken of while on the subject of versions. This action, if long continued, is naturally calculated to bend the womb, and result in a flexion. The peculiar functions of the bladder and rec-

tum conduce strongly to this end. Both are being constantly distended with contents which force their approximation towards the pelvic axis or centre. While the bladder fills and curls over the fundus as in anteversion or the cervix in retroversion, keeping them pressed downwards and backwards, the distended rectum presses forward, and as it fills, or in the act of defecation, its resisting contents necessarily tend to carry down with them whichever extremity of the womb presents to the rectum.

The womb gets in the transverse position oftener than we are aware of. Version is a thing of degree. It is by no means necessary that we should assume that there must exist an extreme version *ab initio*. Every degree of version has its proportionate superincumbent pressure and its *pro rata* rectovesical pressure, and between them flexions are a natural consequence. Many other causes have been assigned to account for this condition, and undoubtedly there is a moiety of truth in each ; but I confess to scepticism as regards the extent of their claims. I do not believe that the weight of a fibrous growth, the size of a filbert, in one of the walls of the womb is adequate to the counterbalancing of such a firm structure as the womb naturally is. Nor do I participate in the view that areolar hyperplasia is *per se* a cause of flexion. In this condition, as a result of subinvolution, the womb, as a whole, participates, and there is no room for disproportionate top-heaviness. But indirectly it undoubtedly is a cause ; for the superadded weight of this condition, coupled with relaxed uterine supports, renders the womb an easy prey to version influences, and then it becomes subjected to the flexing forces already named. Nor again do I subscribe to the doctrine that organic degeneration of one of the uterine walls is more than a very rare cause of flexion. Rokitansky and Klob are undoubtedly correct in the view that an ingrowth of utricular glands, as a consequence of endometritis, near the os internum, causes atrophy by pressure, and after the bursting of the cysts, "a flaccid, net-like, areolar tissue is nearly all that is left, and as a consequence the womb is unable to maintain its erect position." But different causes often produce like results. An atrophied, flaccid, net-like work of areolar tissue found in the sharp bend of a flexion is just as natural a result of that bend

and its pressure, as it is of the pathological conditions above named, and, in my opinion, the flexion is the cause of that condition, and not the result, in by far the greatest number of cases.

Cervical flexions, in which the body of the womb is not displaced forwards or backwards, is either the result of cervical hypertrophy against the sacral curve, or else the effect of a general hypertrophy, a generally relaxed condition of the pelvic tissues, and a consequent falling of the cervix into the sacral hollow upon the hard sacral floor. Balanced thus upon its end, and supported in its upward bearing only by this floor with its own weight, and abdominal pressure antagonizing, the cervix bends forward upon itself, and a flexion is the result. A latero-flexion is the remote result generally of a parametritis affecting both the uterine tissue and one of the broad ligaments, combined with recto-vesical pressure.

What are the consequences of flexion? In a word, interference with uterine circulation, engorgement, perverted nutrition, irritated nerves, a swollen, sore, and painful womb. Hewitt has exhausted the subject, and Thomas has epitomized the answer thus, "Congestion, hypergenesis of tissue, sterility, dysmenorrhea, menorrhagia, endometritis, tendency to abortion, hematocele, ovaritis and salpingitis, pelvic peritonitis, fluid accumulation in utero, uterine neuralgia, cystitis, rectitis, granular degeneration, etc."

The treatment of flexions is divided between the knife, dilatation or divulsion, vaginal pessaries, and vagino-uterine pessaries. In regard to the use of the knife, notwithstanding its high authority, the time is arriving, I think, when it will be very rarely if ever used to remedy a uterine flexion. The knife will always be used and with the best of results in cases of organic stenosis of the cervical canal, and this utterly regardless of the flexion and without benefit to the flexion. A stenosis produced by coaptation of the uterine walls as a consequence of a flexion can never, in my opinion, be benefited by the knife. As an illustration, take a piece of india-rubber tubing, bend it so as to coaptate its walls, now slit through the convex wall nearly to the bend, is the stenosis relieved? Not at all. Now carry the incision through the bend, if you please, but not through the whole thickness of the tube;

for this can never be done in this operation on the uterine wall unless we go into the peritoneal cavity. Is the stenosis of coaptation yet relieved? No. Turn your knife and bury it as deeply as you dare without coming through, into the angular bend of the concave wall. Is the stenosis of coaptation now relieved? No. The thing is impossible, simply because a fundamental principle of physics and mechanics stands in the way. In the bending of any oblong body possessed of appreciable thickness and a structure of interwoven longitudinal and circular fibres, those longitudinal ones in the field of convexity must either part or tend to hug the angle of the concave side. Temporary good has undoubtedly followed the cutting process in some instances. I tried it on several occasions when the operation was first proposed, and thought that I derived benefit; but I am convinced now that it resulted from the depletion and the dilating and straightening work of the sound which always follows the cutting operation. Of late, the operation of rapid dilatation or divulsion is said to cure flexions. The claims, if I am not mistaken, are that it removes obstructive dysmenorrhea and straightens the womb by stretching or rupturing both the circular and longitudinal fibres of the womb. So far as organic stenosis is concerned, perhaps no other method of treatment answers as well. But in regard to the stenosis of coaptation from flexion, I believe that it does far more than is necessary. In such a case we do not want dilatation or divulsion of the circular fibre. We want a stretching, an elongation of the contracted concave uterine wall, and if possible a contraction of the already too much elongated convex one. Accomplish this, and not only the obstruction will be removed, but all the other troubles consequent upon a flexion. The old method of attempting to correct flexions by the frequent use of the uterine sound has done some good, but by no means as much as desirable, nothing in comparison with the time and trouble spent.

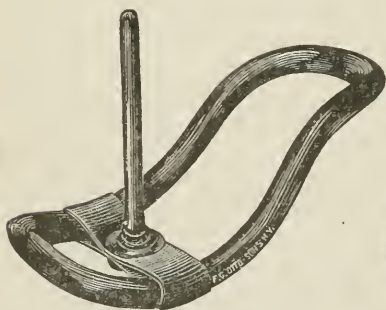
A goodly percentage of the prevailing varieties of flexion is amenable to treatment by the anteversion and retroversion pessaries, and where they will answer we are not justified in resorting to severer measures. Even where they do not at all correct the flexion, they accomplish a deal of good, for they enable the womb to assume a position more nearly in relation

to the pubic axis, whereby the strain is taken off from the uterine supports and the fundus of the womb is presented to superincumbent pressure instead of its broad sides. Objections have been made to the cul-de-sac force exerted by these pessaries in retroflexions and antelexions (oftener the latter), on the ground that by carrying the cervix upwards and backwards as in retroflexions, or forwards and upwards as in antelexions, we thereby aggravate the already existing trouble. More force would attach to these objections if it could be shown that the body of the womb in any sort of way approached a fixture. Aside from cases of adhesion, which, of course, are not reckoned in the count, the idea is illusory. It needs but a moment's consideration to be convinced that the flexion will be infinitely more aggravated by allowing the womb to remain undisturbed, with the weight of bladder and abdominal contents upon its broad back as in antelexion, or with the downward-driving contents of a distended rectum upon its fundus and anterior wall as in retroflexion, coupled with the recto-vesical cramping heretofore spoken of. Scooped out from underneath these forces and weights with its fundus placed upright midway between rectum and bladder, as it can be done by the anteversion or retroversion pessary—the flexed womb is seen to be placed under far more favorable circumstances both as regards relief from present discomfort and a prospect for future recovery, even though the pessary effects no immediate change in the flexion proper. But cases are by no means unfrequent where the pessary begins an immediate change in the flexion. There are all degrees of tonicity of structure in a flexed womb, from that abnormally relaxed condition which will cause it to bend almost by its own weight, when horizontally placed, up to that rigid, almost unyielding firmness which characterizes the flexion of long standing, and in which we have hypertrophy of one wall and atrophy of the other. Far into the midway between these extremes the version pessaries will do much that is desirable. A properly selected retroversion pessary will give a retroflexed womb the benefit of gravity, together with that of superincumbent abdominal pressure while in the erect position, and if to this be added, what should always be insisted upon, the nightly resort to the knee-breast position and its admitted air, conjoined with semiprone or side

position during the night, it will often turn out permanently corrected. The same can be said of a proper ante flexion pessary for ante flexion conjoined with the foot-shoulder position on retiring and the supine one during the night. But while we have cases where these version pessaries will thus accomplish all that could be desired, we have others where they effect nothing towards correcting the flexion, although they secure favorable position.

Among the many devices for meeting and correcting an organically flexed womb, the stem pessary was naturally one of the first and one of the most plausible. As that instrument has heretofore been properly or improperly used, so it has been extolled or condemned. Leaving out of view the fact of introducing the instrument at the wrong time, keeping it in situ too long, employing it when womb and ovaries are morbidly susceptible—all of which render it a dangerous remedy—I believe the main objections to its use to be based, 1st, upon the faulty manner of employing it or keeping it in situ, and, 2d, upon the fact that gynecologists heretofore have contented themselves with the straight stem, in consequence of which the desirable results have not followed. The simple stem requires packing of the vagina to keep it in place, and with this disagreeable necessity, patients will not submit often to the treatment. Thomas has attempted to remove this disagreeable feature by making use of a vaginal pessary furnished with a bowl by which the stem is kept in its place, but even with this ingenious contrivance the stem will sometimes work out. Where the stem is rigidly fixed at a certain angle to a vaginal pessary, as with Hewitt's, it is difficult of introduction and removal, and liable to be painful and do injury when worn. Some few years ago, I commenced an innovation upon the old stem treatment by making use of a curved instead of a straight stem. The idea struck me that, if good could be accomplished by flexing wombs with the sound at short intervals, and used only for a few minutes at a time, much more good would result by introducing a curved stem pessary, if it only could be kept in situ with the curves properly directed. I hit upon the following contrivance. I cut off the blind end of a No. 6 flexible catheter, in length from two to two and a half inches. Into this I thrust the catheter wire as far as it would go, bent to the curve which I

wished, and the protruding end I bent into a looped cross-bar about an inch and a quarter long, cutting off the surplus wire. Having first flexed the womb with the sound, or in a manner which I will soon describe, I pressed the catheter contrivance into the womb with the curve opposite to the flexion to be corrected, and the cross-bar of the wire transversely to the vagina. I now packed the vagina with carbolized cotton, being careful to pack behind the cross-bar in the posterior cul-de-sac as well as in front of it, for the special purpose of preventing the curved stem from turning. In this condition I put my patient to bed, keeping her there for about a week, removing the packing every other day and repacking. I treated a number in this way with no untoward results and always with varying success. But the chief obstacle in the way of carrying out the treatment and making it as general as the proper demand was the disagreeable packing, and the necessity of sending the patient to bed and keeping her there a number of days. I met the difficulty as follows. I caused an india-rubber band to be stretched over a narrow Albert Smith pessary; through the middle of this band I thrust a vulcanite stem varying from the straight to to any curve desirable, with a button fixed to one end; down the stem I placed another perforated screw-button adjusted to a screw-thread on the stem at its base, by which means the stem was firmly fixed to the band with its curve in anterior, posterior, or side direction, as desirable. Into the button end



The Straight Flexion Pessary.



The Curved Flexion Pessary.

of the stem I had a hole drilled to the depth of a third of an inch; this was for the purpose of receiving a wire probe held in the hand to facilitate introduction. The accompanying cuts show the instrument with straight and curved stems.

With the patient in the semiprone position, and by the aid of Sims' speculum, the instrument is easily introduced. The first step is, of course, to anteflex a retroflexed womb, to retroflex an anteflexed one, and lateroflex in the opposite direction a lateroflexed one. My method of doing this is as follows: Cut off the closed end of a No. 6 or 8 flexible bougie to the length of about three inches; around and close up to its open extremity wrap a band of adhesive plaster a third of an inch wide, sticking its two ends together and allowing them to project a third of an inch. Grasping this projection with the dressing forceps, and after dipping it in warm water, pass it into the uterine canal. It easily accommodates itself to the flexion. Now holding it in situ with the forceps, pass differently curved wire probes into the bougie, thus gradually straightening the flexion, and at last flexing it in the opposite direction by correspondingly turning the probes. I have these wire probes made smooth, nickel-plated, fixed to light handles, and armed with a little sliding vulcanite ball to indicate when I have reached the full depth of the bougie. It is well to begin treatment with employing this flexing process alone on two or three different occasions before introducing the flexion stem pessary. Having got the womb flexed as we wish, the next step is to pass the wire probe into the hole of the stem, by which it can be turned in any direction on the india-rubber band, and introduce it as you would a curved sound into the uterine canal; at the same time holding the vaginal part of the pessary in such a way as to facilitate its introduction into the vagina. If we have a case of retroflexion, the vaginal part should be of good length and the band should be placed near the transverse bar, so as to carry the cervix backwards and upward, and thereby accomplish an anteversion as well as an anteflexion. If we have an anteflexion to deal with, the vaginal part should be shorter and the band placed farther down the arms, so as to admit of shortening the vagina and bringing the cervix forward. In a case of latero-flexion, the stem should be turned on the band, so as to fix it in the opposite direction.

The patient, in most cases, is allowed to be about and indulge in a moderate amount of exercise. As a rule, the pessary can be worn from a week to ten days without trouble.

If pain or constitutional disturbance to any extent ensue, the patient is ordered to remove it at once—a thing which she can easily do. On removal, an anteversion or retroversion pessary should be introduced. After a rest of a few days, the flexion pessary should be again introduced, to be removed as before, after a short period; and this mode of dealing should be continued in accordance with the requirements of each case. Such a treatment of a week's duration will accomplish more than six months of treatment by the sound, and be attended by far less annoyance and, I think, with far less danger. I have now treated a goodly number in this way, nearly all of whom have been greatly benefited, and the majority furnish striking evidence of its merits.

The principle of the action of the curved stem pessary is plain. When in situ, the atrophied wall of the womb is put upon the stretch, and the hypertrophied one is shortened and condensed by pressure. In the one, nutrition is favored; in the other, absorption takes place. Many advantages are obtained from the elastic band. It keeps the stem securely in situ without rigidly fixing it, while at the same time it constantly, but gently, exerts an anteverting or retroverting force so desirable in connection with corresponding flexions.

In looking over the last number of Braithwaite (Part lxxvii., July), I was gratified to see that Dr. James Braithwaite has been engaged in treating retroflexions upon the same principle and in a similar way. I fail to see any advantage in his method over the one which I first adopted, while it seems far more complicated. As for its merits compared with those of the one which I now employ, and which I have just described, I leave the profession to judge.

A word in regard to the material of pessaries. Nothing has ever yet been found to equal, in all respects, the vulcanite. The soft rubber is seriously objectionable for two reasons: 1st, it is exceedingly liable to produce abrasions; and, 2d, it is the witches' caldron of intolerable stench. I care not how pure the rubber be, the odor of the disgusting compound of its elements with absorbed, decomposing vaginal secretions is a ghost that will not down. Even the little bands which I use on the vulcanite pessaries give a deal of trouble in this respect, which is only obviated by the substitution of a new band

every time the pessary is removed, and a free douching of the vagina with carbolized water.

I feel under obligation to make commendatory mention of Mr. Philip Schmidt and Messrs. Otto & Sons, instrument-makers, for the interest which they have manifested in executing my suggestions.

THE RECURRENCE OF NAUSEA AND VOMITING DURING THE
LATTER MONTHS OF PREGNANCY.

BY

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THE occurrence of a convulsion, in women suffering from an attack of the acute parenchymatous nephritis of pregnancy, not unfrequently gives the first warning of the presence of a serious renal lesion. There may have been, it is true, some edema of the lower extremities—a condition by no means unusual during gestation, headache, occasional gastric disturbances, or even various obscure nervous symptoms, and yet the patient may not have considered her condition in any way abnormal, or different from what she ought to expect during her pregnancy. This is the less to be wondered at, when it is remembered that primiparæ are far more liable to attacks of puerperal convulsions than multiparæ, and the woman who finds herself pregnant for the first time, has usually been thoroughly schooled by her female associates into believing that with pregnant women all things are not only possible, but probable. The result is, that no medical advice is sought for, and it is only when an actual convulsion occurs that the physician is called upon to assume the then only too grave responsibilities of the case.

Even where the medical attendant has had a general supervision of the patient during her gestation, it not unfrequently happens that symptoms are too often ascribed to the pregnancy alone, which unmistakably point to a serious, if not fatal, diseased condition of the kidneys.

As a rule, however, the group of symptoms which indicate the presence of the acute parenchymatous nephritis of pregnancy are so well marked and so characteristic that the watchful physician can have but little excuse if he fails to recognize the true character of the threatened danger. The gradually increasing edema of the extremities, the puffiness of the face, the headache, disturbances of vision, gastric derangements, symptoms of a general nervous irritation, an alteration in the quality and quantity of the urinary secretion—all these are well known to accompany, in a more or less well-marked degree, this serious complication of pregnancy.

Unfortunately, however, it sometimes happens that the invasion of an attack of acute parenchymatous nephritis during pregnancy is so insidious that no noticeable symptom ushers in or calls attention to the presence of this dangerous disease, or it may be that the affection runs so rapid a course, and the symptoms follow one another so quickly, that a convulsion occurs before the true nature of the local disturbance is recognized.

It is very desirable, therefore, whenever exceptional cases occur—cases in which the grouping of the symptoms is peculiar, or where the marked absence of symptoms usually present is noticed—that such clinical observations should be made the subject of special record, in order that, in other similar cases, the medical practitioner may profit by the experience of those who have been taught at the bedside the significance of some heretofore unnoticed or rare characteristic of the disease under consideration.

In 1871, Dr. Calvin Ellis (Boston) reported¹ three cases of Bright's Disease, in which vomiting was the sole prominent symptom of the disease. These cases were very forcibly brought to my mind while studying up the records of twenty-eight cases of the acute parenchymatous nephritis of pregnancy which I have seen during the last eight years. Among these were three cases which seemed to call attention to the serious nature of nausea and vomiting when recurring in a patient, during the latter months of her pregnancy, who has been free from that distressing symptom for several weeks or even months.

It is well known that the nausea and vomiting, which are so

¹ Boston Medical and Surgical Journal, June 29th, 1871.

characteristic of pregnancy, occur very early, usually during the second month, and last only a few weeks, or occasionally until quickening has taken place. Very rarely are cases met with where these symptoms have lasted through the whole of the gestation. In such cases, of course, from being a symptom, it really comes to be indeed a disease, which at times may even threaten to destroy both the mother and child. It is, however, extremely rare for nausea and vomiting to return after the patient is once fairly free from that symptom, until at the close of pregnancy, when it not unfrequently accompanies or even ushers in the first stage of labor. The following three cases were exceptional as regards the occurrence of this symptom, and as such they are now placed on record.

CASE I.—C. M., æt. 23, primipara, was brought to the Boston Lying-in Hospital, April 22d, 1878, at 10.15 P.M., in an almost moribund condition. Her catamenia had ceased about the middle of July, and her confinement had been expected about this time. Seven weeks before, she had been seized with an attack of obstinate vomiting which lasted nearly a week. The physician who then saw her, prescribed bismuth, and she was somewhat relieved, although the nausea and daily vomiting did not entirely cease. About ten days before her death, the same physician was again called, the vomiting having become very distressing and constant. Bismuth was again prescribed, but with no effect. Four days later, she had a convulsion. Sleeplessness, constant vomiting, a slight elevation of the temperature and pulse were recorded at this visit. The next day the urine was examined, and found to contain albumen and casts. Several consultations with other physicians were had; but, although the temperature had risen to a hundred, and all attempts to arrest the vomiting had failed, it was decided not to induce labor, as the patient did not seem exhausted. The next day, however, she began to fail rapidly, and twenty-four hours later was brought into the hospital. The radial pulse was hardly perceptible. Heaters and blankets were applied and stimulants were freely administered. The fetal heart could not be heard. The cervix was soft, the os thin and dilatable. There was no edema of the feet or hands. Early the next morning, I saw the patient for the first time. A very small amount of urine had been secreted since her entrance. This contained a large amount of albumen and a number of granular and hyaline casts. After consultation with Dr. Minot (one of the consulting physicians of the hospital), it was decided to at once induce labor. The os was dilated gradually by the fingers, and the patient delivered by means of the forceps. The child was a male, weighing 4 pounds, and had evidently been dead several days, the epidermis peeling off in large pieces. The time occupied in the delivery was thirty-five minutes. The patient died half an hour later.

The post-mortem appearance of the kidney, as described by Dr. R. H. Fitz, was as follows: Kidney small, dark red, of normal density; capsule readily detached; surface beneath not unusual. On section, the relative volume of the cortical and medullary portions unaltered. The pyramids were more injected than usual. The cortex gray, not unusually opaque; Malpighian bodies indistinct. Region of convoluted tubes indicated by delicate opaque dots and lines. On microscopic examination, the renal epithelium was found unusually granular and opaque; the nuclei being indistinct. On adding acetic acid, many granules were dissolved, and those remaining were large, round, glistening; presenting the appearance of fat drops. These changes were found diffused throughout the kidney, both convoluted and straight tubes being affected. Numerous large and small hyaline casts were seen, of a yellowish tint, with but little lustre, their surfaces delicately marked with fine lines. The outline of the casts was often scalloped. Abnormal appearances were not observed in the glomeruli or in the interstitial tissue. The appearances were those of acute parenchymatous nephritis. Only one kidney was examined, and that had to be removed per rectum, no autopsy being allowed.

CASE II.—Mrs. A. C., æt. 27, primipara, came under my care September 26th, 1876, when eight months pregnant. During the second and third months of her pregnancy she had suffered somewhat from morning sickness, but not enough to cause her to seek medical advice. Early in August, she began to be troubled with nausea and vomiting, which, it was noticed, was not confined to any particular time of the day, but which became more and more troublesome until I saw her. At the time of my visit, she stated that the past week she had been unable to retain anything on her stomach. Otherwise she complained of nothing. She was, of course, considerably weakened by the vomiting, and her general manner was one of increasing nervousness. There was no headache, disturbance of vision, or edema of the extremities, although her friends thought her face slightly swollen. The urine contained a large amount of albumen and numerous granular casts. Three days later, she was suddenly seized with an attack of dyspnea, accompanied by a very disagreeable feeling in the back of the head. The amount of urine passed in twenty-four hours was far below the normal amount. The os uteri was two-thirds dilated. Her manner was drowsy. The membranes were ruptured, and the labor terminated as soon as possible with forceps. The convalescence was normal. The gastric disturbance ceased after the delivery. The albumen had disappeared from the urine on the ninth day.

CASE III.—Mrs. S. A. P., æt. 23, primipara, first came under my care when three months pregnant, April 13th, 1875. When about five weeks pregnant, she began to be troubled with more or less nausea and vomiting. Although worse in the morning, this symptom had continued during the greater part of the day until a week before I saw her, since which time she had complained of it only on rising, and even then it was but slight. This symptom of the preg-

nancy ceased altogether without any treatment about ten days after her first visit to me. She was naturally a nervous and hysterical woman, and the history of the four following months was such as might be expected with such a patient. August 2d, a return of the nausea and vomiting, from which she had for many weeks been entirely free, caused me to re examine the urine which an examination made two weeks before had shown to be normal. The specific gravity was 1024, and it contained a small amount of albumen, and two granular casts were found after a careful examination of a number of slides. The nausea and vomiting increased, and she was scarcely able to retain any nourishment, liquid or solid. Her health otherwise was apparently good. There was no other symptom complained of. Such was her condition for the next three weeks. August 23d, she began to complain of headache. The urine now contained a very large amount of albumen, and numerous granular casts. The amount of urine daily passed became greatly diminished, notwithstanding the constant use of various diuretics, and a consultation was asked for, with a view to induce premature labor. It being insisted upon that the consultant should be a homeopathic physician, I withdrew from the case. I learned subsequently that, about ten days later, she had convulsions, and died thirty-six hours after giving birth to a child which lived only two days.

It will be observed that, in these three cases, the patients complained only of a return of the nausea and vomiting, from which they had been free for weeks or even months, and that for some time this symptom alone continued, and was the only indication of the presence of a serious acute renal lesion. An examination of the urine showed in the two cases (II. and III.) which were under my care the true condition of things, and gave the indication for the treatment. These cases have seemed worthy of being placed on record as calling the attention of the profession to the significance of the recurrence of nausea and vomiting in the latter months of pregnancy as indicative, in some cases at least, of the presence of an acute parenchymatous nephritis, and the necessity in all such cases of first examining the urine before attempting to treat the symptom as only a return of the simple nausea and vomiting due to the pregnancy.

CASE OF COLLAPSE OF THE LUNG AND CYANOSIS IN
A YOUNG INFANT,PRODUCED BY VIOLENT CRYING, IN WHICH THE SYMPTOMS WERE SUCH AS TO CAUSE
A SUSPICION OF OPIUM-POISONING; WITH REMARKS ON THE NATURE
AND TREATMENT OF TEMPORARY CYANOSIS FROM POST-
NATAL COLLAPSE OF THE LUNG.¹

BY
J. FORSYTH MEIGS, M.D.

ON Monday, April 9th, 1877, I was sent for to see a young infant said to be alarmingly ill. Arrived at the house at 11½ A.M., and found an infant four weeks old, quite healthy at birth, and nursed by a healthy mother. From birth to the evening of Friday, April 6th, the child had been quite well. It had always nursed naturally, and had had three or four abundant, smooth, well-concocted yellow stools each day, and had seemed healthy in every respect. During the night of the 6th, it had been restless and had cried violently. It was supposed to be colicky, and no one was alarmed. On Saturday, the 7th, it was uneasy, and cried a great deal, and also through the following night. On Sunday, it still cried very much, but as there was no other sign of ill-health, and as the child nursed, and continued to have the bowels moved freely and naturally, it was not thought to be seriously ill.

On Sunday, the 8th, as the supposed colic with the frequent crying continued, the monthly nurse, without consulting the physician, gave at 12 M. 10 drops of Dewees' carminative. At 9 P.M. of that day, no relief being obtained, the nurse gave 15 drops more. This second dose was followed by some relief, as the child was easier and more quiet up to 11 P.M. It began then to cry again, and continued to do so until 6 A.M. of Monday, the 9th. The mother, who was a most intelligent person, though without experience, as this was her first child, told me that the baby "screamed most violently and continuously." The nurse said that the child "yelled" all night, but said afterwards that it would drowse for a little while, and then "yell" most violently for long periods. At 6 A.M. of Monday, there having been no rest through the night, the nurse gave 15 drops more of the carminative. After this the child slept upon the lap, and refused the breast. At about half-past ten o'clock, the baby was put into its usual warm bath. It was listless and drowsy through all this, and, at the close of the bath, whilst being dressed, was observed to be curiously pale and white over the whole body, looking like a person in a faint. Soon after this she became livid in color, had hurried and frequent breathing, and both nurse and mother became greatly alarmed, thinking the child might be dying. They sent at once for the accoucheur, for myself, or for any physician they might be able to find. They stopped a physician in the

¹ Read before the Obstetrical Society of Philadelphia, September 6th, 1878

street, and when I reached the house, at 11½ A.M., this gentleman was there. He told me that he found the child very pale, with scarcely any pulse at the wrist, and looking very ill. A mustard plaster had been applied to the chest, and, as it had reddened the skin considerably, was removed.

On examination I found it looking pallid, but not blue at all. The breathing was short, feeble, and uneven; the pulse was frequent and weak, but could be felt distinctly; the pupils were contracted to a very small size, and the eyes motionless.

At first view of the case, after hearing of the Dewees' carminative, and observing the drowsiness and contracted pupils, I thought it was one of overdosing with opium—that either the carminative had been stronger than usual, or that more had been given than was intended. When I suggested this fear, the nurse broke down in great despair, and the mother was deeply distressed. Upon going over the history more carefully, however, and reflecting that nine hours had elapsed between the first and second doses, and nine hours between the second and third doses, and that between the second and third doses the child had screamed most furiously and continuously, I felt convinced that, if real narcosis were present, it must be the result of the last dose alone. The last dose had consisted of 15 drops only, and I began to think it impossible that this small quantity could have produced such an effect. The first two doses, containing 25 drops, had caused no narcosis. How could then one of 15 drops determine it?

Dismissing from my mind, therefore, the theory of narcosis, I thought at once of collapse of the lung, post-natal atelectasis, of which I had seen several examples in children of a few days or a few weeks old, with symptoms much like those here present.

The child was now lying quietly on a sofa. I passed a finger gently into the mouth. It was not grasped by the tongue as it ought to have been, but was merely nibbled at in a feeble way. I had the patient lifted carefully and gently upon a pillow and placed upon the mother's lap, and told the mother I wished to see whether the child could or would nurse. I selected the left breast in order that the child's heart might have free play in the act of nursing. At first no notice was taken of the breast. I then had the mouth held gently, but with some persistence, at the nipple, and the nipple inserted between the lips. The child now tried apparently to make an effect at suction, but, suddenly, the head was thrown back stiffly on the neck, and the body was stretched out with a convulsive movement. The face was distorted, being drawn towards one side, the breathing became labored and irregular, and the body assumed a dark livid color all over. In fact, there was a manifest attack of cyanosis with convulsive stiffening. I lifted the child as quietly as possible from the lap, and, having an inclined plane of about 15° formed of pillows, laid the body carefully on the right side upon this plane, and gave strict orders that it should not be disturbed in the least from this position for several hours. Presently the dark color passed away, and the body became pale. The respiration was short and feeble, the face dull and passive, and the mouth and eyes were

closed. There was no sign of coryza, and no nasal nor faucial rattle; the pupils continued very much contracted. I added ten drops of brandy to two teaspoonfuls of breast-milk, and poured a few drops into the mouth. Each time that I did this, the child moved, threw back the head, and the face was drawn upwards and outwards in a strong grimace. This was a slight convulsive movement, and was repeated several times within an hour—indeed, whenever the child was at all disturbed. I made a mèche of soft cambric rag, wetted it with the milk, inserted it between the lips, and left it there, telling the nurse to wet it afresh from time to time, by dropping a little milk upon it from a teaspoon.

At 12½ P.M., the child was doing well; lying quietly on the side, looking pale, and now and then sucking at the wetted rag. At 1½ P.M. no change; no spasmodic movements nor blueness. Treatment to be continued.

At 3 P.M., I was sent for to meet the accoucheur who had arrived. This was a gentleman of the largest experience, and one whom I often met in consultation. He had already examined the patient, inquired into the antecedents of the case, and announced his opinion that it was one of narcotism from the opium contained in the carminative, so that he was impressed, as I had been, with the strong resemblance of the symptoms to those of opium-poisoning.

Just before this the bowels had been moved. The stool was unlike any one the child had had since its birth. It was small in quantity, yellowish in color, and consisted of a thin feculent matter, intermixed with a large proportion (about half) of tough, stringy mucus, and a good many small rounded, undigested lumps of caseine. It was much more offensive, too, than usual. It was the first of the kind, the mother said, the child had ever had. Previously they had always been smooth, yellow, perfectly well concocted, without mucus or lumps of caseine, never greenish, never fetid, but having the light odor which belongs to the dejections of a healthy infant. The character of this stool explains, I think, the violent crying of the three days before the cyanosis set in. It showed that the child had had a fit of indigestion from some cause. There was a lientery of undigested caseine, and as a consequence, catarrh of some part of the intestinal mucous membrane with colic and pain.

The child was still lying quietly on the side, but was nursing gently through a small india-rubber tube attached to a shield which fitted over the mother's nipple. We directed that perfect rest in the same position should still be maintained. The baby was to be allowed to nurse for two or three minutes at a time, once in an hour, the breast having first been partially emptied by a breast-pump. At 9 P.M., all going on well, the child composed, and breathing more freely and naturally.

April 10th, 9 A.M.—Doing well: a quiet night without crying or disturbance; nursing now well from the breast, but restricted to a few minutes once in an hour. Had had in the night another stool, of the same kind as the one above described—mucous, offensive, with small undigested lumps.

Evening.—Child seems quite well. Had had one stool since the

morning. It was bright yellow, smooth, of the consistence of thin gruel, considerable in amount, without lumps, and of the natural odor. We agreed now that, if there should be any return of the crying, the child should have ten drops of brandy in warm water, and should that fail to quiet the pain, a teaspoonful of the following mixture, every two hours: \mathcal{R} Sodæ bicarb., 3 ss.; Tr. opii camphorat., gtt. xl.; Tr. rhei dulc., gtt. lxxx.; Syrup., 3 ij.; Aq. menth. pip., 3 xiv. M.

From this time forwards the child remained well, and, in August, 1878, it was a fine, well-grown, healthy infant.

Remarks.—The case just detailed is an interesting, and even an important one. It shows how difficult a thing diagnosis may be. For here an infant, four weeks old, supposed to be in good health except for a sharp colic, for which the nurse is ashamed to send for the physician, became suddenly dangerously ill, and developed a series of phenomena so much like those of opium-poisoning as to suggest that diagnosis to two experienced physicians. So strong was the resemblance of the condition to that of opium-poisoning that my friend was disposed to maintain throughout the case that it must have been the result of the doses of Dewees' carminative. For myself, I soon became convinced that the amount of opium contained in the carminative was quite too small to cause dangerous narcosis, and that, moreover, the symptoms, when carefully analyzed, were not those which belong to opium-poisoning.

It is easy to imagine the terror and distress of the nurse, and the horror of the mother, when they were told that the case was one of overdosing with opium, and the comfort they felt when I was able to assure them that, in my opinion, the dangerous symptoms were not the result as I had at first feared, of the doses given by the nurse, but of a morbid condition of the lungs and circulation to which very young infants are occasionally liable. In the one case, the child, should it die, would have been killed by the nurse; in the other, it would have died by the hand of God.

I can very well understand how the first opinion I formed was that of opium-poisoning. The child was drowsy and stupid, and had been so for several hours; it had refused the breast, had had a convulsive seizure, and had taken several doses of a carminative containing opium. But, on more careful study of the history of the case, I learned that nine hours had elapsed between the first and second doses without any sign whatever of

opium action, and that nine hours had elapsed also between the second and third doses, and that during this time the child, so far from being stupefied as from opium, had screamed, or, as the nurse said, "yelled" for a number of hours. The third dose was then given, and it was after this that the infant became quiet and drowsy, then, after the bath, very pallid as though in a fainting state, and after this, convulsed, blue in color, and apparently dying. If, therefore, the condition was one of opium-poisoning from the carminative, it must have been the last dose which had produced all these dire results. Moreover, how suppose that, if the first dose of ten drops, and the second of fifteen, had caused no sign whatever of opium action, the third of fifteen drops could act with such intensity? There could have been no cumulative action of the two first doses, as nine hours had passed between the first and second, and nine hours after the second, without a sign of narcotic influence. To make it at all probable that the third dose was the cause of the symptoms, I should have been obliged to suppose that the nurse either deceived me as to the quantity she had dropped, or had been herself deceived, and given a much larger dose than she thought.

I found, moreover, on careful calculation, that the amount of laudanum in Dewees' carminative was not more than three-eighths of a drop in ten drops of the carminative, and five-eighths in fifteen drops, so that the child could not have taken more than a drop and a half of laudanum in the whole thirty-five drops of the carminative administered, and that the whole amount had been distributed over a period of nearly twenty-four hours.

But, not only were the doses of opium insufficient in quantity, and given too far apart to produce dangerous narcotism;—other conditions were present opposed to the theory of opium-poisoning. The respiration and circulation were both frequent and feeble—they are usually slow in opium-poisoning. Movement and agitation of the body, instead of being beneficial, as in opium coma, developed new and dangerous symptoms, to wit, cyanosis and convulsive phenomena. Previous to my first visit, what first alarmed the mother and nurse was the effect of the disturbance necessary in bathing the child at half-past ten o'clock. Before the bath, the child was heavy and

lethargic, and it would not nurse. During the bath, it was listless and dull, and, at the close, became very pale, as though in a fainting state, and then grew livid. It was this condition which gave rise to the fear that it was dying. An hour later, when I arrived, it was lying quietly on a sofa, without the appearance, at first glance, of dangerous illness. The face was still, the respiration rapid and high, the pulse frequent and very small (indeed the physician who was present stated that it was nearly extinct when he first felt it), and the pupils contracted. When the child was moved, at my request, gently, to the mother's lap, to try whether it would nurse, the result was a sudden development of cyanosis, grimaces, gasping, and stiffening of the body—the very effects of movement which I had seen several times before in cases of cyanosis from collapse of the lung, and certainly not those one should expect to see in opium-poisoning. The contraction of the pupils, which was one of the striking symptoms, and one of the most frequent and marked in opium coma, occurs in other forms of disease of the nerve-centres besides poisoning by opium, and may be explained in this case on other principles, as I shall attempt to show further on in the discussion of the case.

Dismissing then, on these various grounds, the theory of opium-poisoning as the cause of the symptoms in the case, how are we to explain the cause and nature of this alarming and sudden illness—an illness which had nearly proved fatal to the child, and which had so much the appearance of opium-poisoning as to suggest that explanation to two competent physicians?

I believe that the symptoms were the result of the violent crying which had been continued, off and on, for two days and three nights, and which had for its cause colic pain, induced by a fit of indigestion. This crying had, in my opinion, induced finally such exhaustion of the respiratory muscles as to cause collapse of a portion of the lungs, and collapse of an amount sufficient to determine obstruction of the pulmonary artery, overloaded right heart, empty arteries, and such diminished supply of arterial blood to the nerve-centres as to establish anemia of those centres, and so coma, convulsion, contracted pupils; and the various phenomena which looked so much like opium-poisoning.

If this opinion be a correct one, it is certainly an important

fact for the medical practitioner, since he might otherwise, in such a case, assert opium-poisoning and so injure the reputation of an innocent nurse, or cause a cruel and unnecessary wound to some family. But as all this is, so far, only my own explanation of such cases, I desire to call the attention of the Society to some of the reasons on which I base this opinion, and to explain, in some detail, what I conceive to be the mode in which violent crying may produce this result. I will first quote the history of two cases which I had seen prior to the one described this evening. In one of these, the cyanotic attacks followed so directly upon violent crying that I think no one can doubt the relation of cause and effect between the two conditions. In the other, though the crying was not so violent, I could, at the time the case occurred, discover no other cause.

In the first case¹ a female infant, which had been perfectly well at birth, and up to the moment of the attack about to be described, was put suddenly into a bath by the nurse, on the eighth day after birth, directly after it had waked from sleep. The child, not yet properly awake, was greatly terrified, and began to scream violently. Instead of removing the infant from the bath, the nurse persisted in holding it immersed in the water for some minutes. It became deeply blue and convulsed, it frothed at the mouth and nose, seemed to be suffocating, and appeared to be dying. These symptoms continued for three-quarters of an hour, when they gradually passed away, and it fell into a heavy sleep. When I saw the child, soon after this, the only signs of disorder that remained were unusual paleness, drowsiness, and an expression of feebleness. Some three hours later, it waked, nursed, and from that time continued well. The only directions given were, no more bathing for some time, and slow, careful handling.

The second case is as follows :²

In the spring of the present year, I attended a lady in her confinement, who gave birth at full term to a healthy boy, weighing between nine and ten pounds. The child was perfectly well in every respect when born, and gave no disquietude up to the sixth day after his birth. On that day he cried a good deal in the morning. At one o'clock in the day, he began to moan, and seemed distressed, so that the mother asked whether he was not ailing. Just before 2 P.M., whilst in the nurse's lap, he ceased moaning, became bluish, and seemed to lose his breath, so that the nurse thought he was dying. She immediately placed him in a warm bath, and sent for me. The bath restored his respiration, the blueness passed away, and he looked much better, though he continued

¹ Meigs and Pepper, *Dis. of Children*, 6th ed., p. 135.

² *American Journ. of Med. Science*, January, 1852, p. 94.

to breathe irregularly and unevenly. A short time after this, he again became blue, and breathed slowly and irregularly, but had no spasm. A neighboring physician was called in, and ordered a repetition of the bath and a bottle of medicine of some kind. Shortly before 4 o'clock P.M. I arrived, and found the child lying upon the lap of the nurse, and just beginning to have another one of the paroxysms which had caused so much alarm. The whole of the exposed surface, the head and neck, and the arms, hands, and feet, were bluish. As I looked at the patient, the color of the skin, especially that of the head and neck, became more and more blue, and at last almost black, so that the child looked more like the child of a black than of a white woman. At the same time, the head was drawn backwards and to one side by a tonic muscular spasm; the arms and legs were extended and rigid, and the fingers were flexed in the palms of the hands. The respiration was slow and imperfect, and the child seemed as though about to die in the convulsion. This condition lasted for some moments, after which the convulsive state subsided, but the child remained bluish and in a state of stupefaction.

There was nothing in the history of this case that allowed me to refer the symptoms to any other cause than obstruction to the pulmonary circulation from collapse of the lung, and perhaps a reopening of the foramen ovale from the congestion of the right side of the heart, brought about by the partial arrest of the current through the branches of the pulmonary artery. There was no derangement of the digestive function, nor was there any sign, even the least, of a catarrhal condition to explain the symptoms. I concluded, therefore, that the case was one of sudden collapse of some portions of the lungs, with consequent congestion of the right side of the heart, and, perhaps, reopening of the foramen ovale and admixture of the two kinds of blood. I told the mother that there was no indication for any medicine; that all we could do was to place the infant on its right side, on an inclined plane of pillows, in order to let the heart have full play, and to give every half hour five drops of brandy in a teaspoonful of breast-milk. He was not to be disturbed from this position for several hours for any object whatever.

My directions were accurately complied with. In a very short time the color of the skin began to improve, and, though there were two slight paroxysms of convulsive stiffening with increased depth of the cyanosed tint, between this time and the evening, I found the child much better in all respects at my evening visit. There was still, however, some blueness, with irregular, short respiration, and with a continuation of the dullness and inattention. During the early part of the night the breathing was short and uneven, and attended with some moaning; but about 4 A.M. these symptoms disappeared, the child fell into a natural, easy sleep, lasting until 7 A.M., when it waked, nursed without any difficulty, and seemed quite well.

The child recovered perfectly, and is now (October 29th, 1851) in fine health.

It seems to me quite plain that, in the first of these cases at least, the violent crying and subsequent collapse of the lung and asphyxia must have been cause and effect. In the second case, the crying was not so marked, but it had recurred, and if it were not the cause of the subsequent collapse, I know not to what other cause to ascribe the illness.

For myself, I find no difficulty in understanding the mode in which violent crying may produce, in very young infants, the results witnessed in these three cases. Why one infant shall suffer so seriously from this cause, whilst a large majority escape, I do not attempt to comprehend.

In seeking, then, an explanation of this accident to the child, I recollect, first, that the young infant has but just issued from its intrauterine life, during which life the forces by which the act of breathing is to be established had been, so to speak, sleeping. At birth these forces enter at once into activity. This new activity is dependent, in all its wonderful arrangements for the pulmonic circulation and the aeration of the blood, upon the respiratory muscles. Unless these muscles enter upon their due and healthy contraction, life is impossible. Their play renders possible the new route for the circulation, and calls into active use myriads of blood-channels and air-cells which had before been closed.

It is not unreasonable to suppose that the new organisms, thus suddenly called into action, may retain, for a time, some memory of their previous condition, that their working may be feeble and imperfect, and that so they may tend to return the more readily, during the first weeks of life, to their fetal state. The muscular apparatus in particular must be feeble at first and more prone than afterwards to exhaustion. Violent crying can be effected only by an amount of muscular work far beyond what the ordinary vital work of respiration demands. Such crying may wear out and exhaust the muscles of breathing just as the locomotor muscles of the hunted hare or over-driven horse are worn out. When this occurs, the thorax is no longer expanded as in healthy breathing; portions of lung, not receiving the due amount of air, collapse, and in the collapsed portion the blood-vessels must be more or less obstructed. Should the respiratory muscles enter suddenly into inertia—faint, so to speak—the child might die suddenly, or in a very short time.

But so far as my experience goes, this does not happen, and yet such a sudden fatality was not far off, perhaps, in the first case quoted in this paper.

How does collapse of the lung induce cyanosis and the various concomitant dangerous phenomena present in the cases described? Evidently by establishing what Dr. Moreton Stillé, in his admirable thesis on cyanosis, published in 1844,¹ demonstrated to be the chief factor in the morbid condition, to wit, a condition of which *contraction of the pulmonary artery may be taken as a type*. Dr. J. Lewis Smith, of New York,² generalizes the same condition in the following words: "Cyanosis is due to vices or defects in the organism, usually congenital, which prevent the free and regular flow of blood to, through, or from the lungs."

It is not necessary for me to go into a study of the various theories of cyanosis. These concern rather those cases in which there is malformation of the heart or great vessels at birth, congenital defects which are absolutely incurable. I have to deal only with a condition developed in children healthy at birth, and of perfect formation, as shown by their perfect recovery at the time from the symptoms, and by the fact that they do not afterwards develop any sign of malformation.

It is clear that the blue color seen in my patients is the result of congestion of the venous system determined by an impediment to the circulation through the lung. But what is the cause of the convulsive movements, the drowsiness or coma, and the contracted pupils? The key to all this was explained by my father, Dr. Charles D. Meigs, in 1850.³ The cause is to be found in the loss to the cerebro-spinal axis of the oxygen which is supplied to it by the arterial blood. Dr. Meigs says (page 104): "I shall proceed to show that the cerebro-spinal axis in man is inert and powerless, nay lifeless, inanimate as of itself; and that it depends upon the influence of oxygen for its power to manifest itself in its life-phenomena."

The phenomena present in these cases are, then, the results of diminished supply of arterialized or oxygenated blood to the brain and spinal marrow. Whether we suppose, as some

¹ American Jour. of Med. Sciences, July, 1844, p. 25.

² See Diseases of Children.

³ See Observations on Certain of the Diseases of Young Children, Phila., 1850.

do, that in asphyxia caused by obstruction to the pulmonic circulation, the capillaries between the pulmonary artery and pulmonary veins, or the smallest terminal branches of the pulmonary artery, contract upon an unchanged venous blood, and refuse it a passage in the left side of the heart; or suppose, as other writers do, that the venous blood does pass, in asphyxia, through the lung and reaches the left side of the heart, the result is the same. The nerve-centres no longer receive arterial blood or receive but scant supplies. A child in this condition is in a state like that of the animal whose carotid and vertebral arteries have been ligated by the experimenter. This experiment, which has so often been performed, always induces instantly, insensibility, coma, and convulsion. Even contraction of the pupils is noticed at first in these experiments. Kussmaul and Tenner¹ state that when the supply of blood to the brain is cut off by ligating the innominate artery and the left subclavian beyond the left carotid artery, "immediately after the stoppage of the blood, the various sphincter muscles of the face contract, especially, and in a very striking manner, those of the iris and eyelids." This is the first effect upon the iris. After a time, however, when the violent convulsions, which always result from this experiment appear, the pupils became uncommonly enlarged.

Contraction of the pupils, which was so strongly marked in the case related in this paper, and which was the symptom which most strongly aroused the suspicion of opium-poisoning, may occur in any condition of disease which paralyzes the cilio-spinal centre in the upper part of the cervical spinal marrow. Erb² says that irritation of the nerve-fibres from the cilio-spinal centre causes dilatation of the pupil, while paralysis of those fibres causes contraction. Dr. Samuel Wilks, in his recent work,³ does not write as decisively on this point as Erb does, but, at page 243, in speaking of the "heat-centre of the so-called cilio-spinal region," he says that this part has some influence over the eye through the sympathetic, and mentions a case of "fracture through the seventh cervical vertebra where the pupils were minutely contracted." Again, at page 435, in

¹ On Epileptiform Convulsions from Hemorrhage. Sydenham Soc. Ed., p. 14.

² Ziemssen Cyclop., New York, 1878, vol. xiii., page 142.

³ Lectures on Dis. of the Nervous System, Philadelphia ed., 1878.

some remarks on local paralyses, under the head of the pupils, he states that the radiating fibres of the pupil are supplied with motor filaments which run into the cervical sympathetic, and that pressure on this nerve, as in cases of tumors of the neck, will cause contraction of the pupil. He states also that "in those fatal cases where blood has burst into the ventricles or diffused itself over the brain, the pupils are often minutely contracted, just as they are in cases of effusion into the pons." I may state in this connection that, in this very month (Sept., 1878), I had a patient, an adult man, who had been brought to the Pennsylvania Hospital by a policeman, having been found insensible in the streets. The man was quite insensible at first, lying almost motionless, in coma, with both pupils very much contracted. I found that he had chronic Bright's disease, and from the low specific gravity of the urine, the presence of large hyaline and partially granular tube-casts, and of cystic collections, crystals of urate of soda at the elbow and about the finger-joints, I concluded that he had the gouty contracted kidney. On the third day, the patient could be made to hear a loud voice, he gave his Christian name, and had distinct right hemiplegia, fully developed. The pupils remained contracted until atropia was placed on the eye-ball, and even then they did not dilate as they ought to have done. He died on the fourth day, and at the post-mortem examination, advanced cirrhosis of the kidneys was found, with a large effusion in the left lateral ventricle of the brain, partly liquid, and partly coagulated. This had broken up the structure of the corpus striatum to a great extent, and had injured a portion of the thalamus.

So it would seem that conditions which paralyze the functions of the upper part of the spinal marrow, and the region about the fourth ventricle, give rise to contraction of the pupils. Certainly we may look upon the more or less completely paralyzing action of asphyxia from temporary collapse of the lungs, which cuts off the supply of arterial blood to the nerve-centres, as sufficient to explain the contraction of the pupils in the case before us.

I desire to call the attention of the Society to the curious effects produced in these cases, so long as the cyanotic state lasts, by any irritation or disturbance which calls the muscular system into action. The child behaves somewhat like a patient suffering from

tetanus or hydrophobia. In some of the cases I have seen, and very notably in the one described in this paper, the least movement—lifting the child, changing its position, putting it, even in the gentlest possible manner, to the breast, the touching of the lips at first with a spoon—brings on irregular contractions of muscles, stiffenings, and when the movement is at all sudden or considerable, will develop a fit of cyanosis.

Treatment.—The only treatment that I have ever seen do any good in these cases, or indeed, in any of the forms of cyanosis of new-born or very young infants, is one which, so far as I know, was devised by my father, Professor Chas. D. Meigs, about the year 1840, and which was first published by him in the second edition of the “Philadelphia Practice of Midwifery” in 1842.

This treatment is simply one of rest in a certain position. The child is to be placed, whenever it presents the signs of cyanosis on the right side, on an inclined plane of from 15 to 30 degrees, the head and shoulders being directed towards the higher part of the plane. Another rule, quite as strict as the position, and one as important, is this: that the child is not to be removed from this position for several hours, or for two or three days, or not until the livid color, the stupor, and the tendency to convulsive movement have disappeared, if happily the case be found to be one in which these conditions can disappear. My own rule is, to order the child not to be moved, not to be touched even, except in the gentlest manner, for twelve, twenty-four, or forty-eight hours.

That this treatment is sometimes successful I feel it quite right to assure the Society. It has succeeded in some five or six cases in my own experience, and Dr. Chas. D. Meigs gives quite a number of cases in his own practice, and in that of others, in his works on Obstetrics and in one on Certain of the Diseases of Young Children. The very simplicity of the treatment may be one reason why it has been so little noticed by writers on diseases of children.

Dr. Chas. D. Meigs based the treatment on the idea that the chief cause of cyanosis was a patulous state of the foramen ovale at birth, or a re-opening of that orifice in the first weeks of life. He supposed that, when the child was placed in the position described, the auricular septum becomes horizontal,

whereby two conditions were obtained which tended to prevent the passage of the venous blood of the right heart into the left auricle. One is that the blood, in this position of the body, has to be projected against gravity; the other, that the valve on the left side of the foramen ovale is pressed downwards against the orifice by any blood that may be contained on the left auricle. Whether the explanation be right or wrong it matters not, if it be true that the position is followed by beneficial results. That the treatment can do any permanent good in cyanosis depending on malformations of the heart, such as cause the incurable forms of cyanosis, is manifestly impossible, but that it is useful in the form of cyanosis described in this paper I have myself no doubt.

My own opinion is that the good derived from this procedure is the result of very simple causes. In the first place, the position on the right side gives the feeble and over-burdened heart the freest possible space for its play. Second, the elevated position of the body is one which all patients, or nearly all patients, with dyspnea, instinctively assume; and third and last, the perfect rest enjoined stops all the coddling, and dandling, and cooing, which frightened mothers and nurses are so apt to use in all dangerously ill babies.

The strange tendency to renewal of the gasping and convulsive movements, which form so essential a part of the cases described in this paper, is lessened, and, as these cases show, sometimes successfully removed. It can do no harm in any case to place a feeble and gasping child on the right side, and order it not to be moved for one, two, or three days. If it be necessary to disturb it to change the napkins, this should be done in the gentlest and the slowest way.

The child should be fed, in the mean time, from a teaspoon, or allowed to suck a rag moistened with breast-milk, or to try, as in the case described above, a flexible tube attached to the mother's breast. A little brandy, five or ten drops, ought to be given every two or three hours whilst the exhaustion continues.

LESSONS FROM A STUDY OF THE CESAREAN OPERATION IN
THE CITY AND STATE OF NEW YORK, AND THEIR BEAR-
ING UPON THE TRUE POSITION OF GASTRO-ELYTROTOMY.

BY

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It is not necessarily requisite to the building of a new structure that an old and still useful one should be condemned and pulled down to give it room for a foundation. The world is wide and there is space and use enough for the temple of Cesar, as well as for that of its honored and new-born rival. We regret that we cannot speak in a more complimentary manner of the results of gastro-hysterotomy in the City of New York than Dr. T. Gaillard Thomas did at the last meeting of the American Gynecological Society in Philadelphia; but we can weaken the force of his expression, by saying that, although he is correct in his statement that there has been but one woman saved by the operation in 250 years, it must be remembered that in the first 210 years of this period there is not a single case on record for the said city, which brings us down to *forty* years in which to make our calculations for and against the operation.

We admit that the operation is a dangerous one, and a very dangerous one; *but deny his assertion that "it is the most dangerous operation in surgery."* Of 12 women operated upon by the Cesarean section in the City and State of New York, and in several instances by surgeons and surgical accoucheurs of considerable eminence, but one was saved; or $8\frac{1}{2}$ per cent. This looks as if Dr. Thomas might be correct. But let us change the scene, and we find that of 18 women operated upon by the same method in the State of Louisiana, 14 women were saved. Oh, it may be answered, but these were nearly all blacks. True, but the worst case that recovered was of European blood. Take the State of Ohio, where all the cases were white, and what do we find? Eight women operated upon, and 6 women saved; or 75 per cent, against $77\frac{7}{9}$ in Louisiana. Now we are not about to claim that the return of any of these States, or their combined average of

$55\frac{5}{9}$ percentage of women saved, is correct, as an exponent of the danger of this operation in the whole United States, for we have an entirely different method of measuring it, and one which we believe to be honest and therefore satisfactory. We must separate entirely the operation from the case, and see what it is *per se*—what is the danger of the operation in a series of cases operated upon under circumstances favorable to success. We cannot take the record of New York, which is the worst of any State in the Union—even more fatal than that of Great Britain—any more than we can that of Louisiana, which is the best, as it is unfair to appeal to either. We have collected, up to this date, 102 cases in the United States, and the average of the whole is more than five times the degree of success in the City and State of New York.

This paper is not prepared with any intention of throwing discredit upon a sister commonwealth in matters of surgery—far from it. We have too pleasing recollections of the period when we practised medicine in the City of New York to be willing to make any such attempt. Its failures have been used by one of its own faculty as an argument against the continuance of the Cesarean operation, and in favor of substituting a new method of surgical delivery for it; and we are about to dissect these failures, and see what is in them and what we should learn by them.

As far as we have been able to ascertain, there have been six Cesarean operations (gastro-hysterotomy) in the State of New York, with one woman saved, and seven in the city, with the same result; the case saved, in each instance, being the first. We will take the thirteen in the order of date, without reference to state or city.

1. 1822, January 29th, Nassau, Rensselaer County, N. Y. We have given abstracts of this and the following cases, with the exception of Nos. 5, 8, 9, 10, and 13, in this JOURNAL for Feb., 1872, Vol. IV., and shall only mention their prominent features. Dr. E. D. Bassett was called to see a young *quadroon* servant, of 14 years of age, at the town named above, and found that she had performed the Cesarean section upon herself, by an L-shaped incision through the abdomen and fundus uteri, whilst lying on a snow-bank; that she had delivered herself of a fetus *per vias naturales*, which she had buried in the snow; and that a second was protruding through the abdominal wound. He removed the fetus, dressed the wound, and attended to the case afterward, treating her antiphlogistically

according to the method of that period, and she recovered in twenty days. Dr. Bassett saw her alive and well at service in Troy, six years afterward.

Now why did this girl recover? We answer: 1st, because she was operated upon early; 2d, she was in full health and strength; 3d, no futile attempts had been made at delivery, or time wasted in waiting for nature; and 4th, because her uterus was in a fit condition to bear the incision; the risk of making it not being increased beyond what is natural, by prolonged uterine action, and the attendant exhaustion of system.

2. 1838, August 12th, New York City. Operation performed by Dr. Richard K. Hoffman. This is the case referred to, as "the only one saved in 250 years." The subject, Mrs. Day, came from Long Island, and was fortunate enough to fall into good hands. Dr. Crocroft called in Dr. Belcher, and the two, Dr. Hoffman, who in turn sent for another surgeon, and he agreeing with him, the operation was performed, after 24 hours of labor, the woman having a good pulse before, during, and after the operation. Mrs. Day was a dwarf of 4 feet, with a long body, and legs no longer than an ordinary woman's thigh. She was a primipara, 42 years old, and had a conjugate diameter of $1\frac{1}{4}$ inches. Not a very good subject, certainly, for "the most dangerous operation in surgery," and still she recovered. Why? Because she was in good condition to bear the operation, not having been exhausted by a prolonged labor, and attempts at version or craniotomy. She returned home to Long Island entirely well in four weeks. Her child was delivered alive, but, being deformed and feeble, soon died.

We now enter upon a record of eleven very instructive cases, all of which died.

3. 1845, June 11th, East Solon, Cortlandt County, N. Y., operation by the late Prof. Azariah B. Shipman. The subject, Mrs. S. K., was a white primipara of 41, having a fibrous tumor which forced the cervix uteri above the superior strait and to the left side, so that version, the use of the forceps, and craniotomy were impracticable. Mrs. K. was in labor at intervals for two weeks, before Dr. S. saw her first, lasting severely for two days, and after an interval of nine days, again for three days more, early in which last the membranes ruptured. Three accoucheurs were in attendance when Dr. S. arrived. The woman by this time was greatly exhausted, had a weak pulse of 120, and an anxious, haggard, and sunken countenance. The operation was considered hopeless by the whole of the consultants, but was performed at the urgent request of the patient. Uterus found of a dark chocolate color, and parted before the knife as if partially decomposed. Child of large size, and had been dead several hours. Woman died of shock and exhaustion in an hour.

As every Cesarean operation in our country where there

was a fibrous tumor has proved fatal except one, where the labor lasted but fourteen hours, it was no wonder that it failed in so protracted a labor.

4. 1855, October 17th, Corning, New York; operation by Dr. Joshua B. Graves.—Subject a dwarf, with full-sized body, but extremities like those of a girl of 10—exhibited as a curiosity; had 14 physicians to see her, 10 present when Dr. G. arrived. She had then been 4 days in labor, with waters evacuated on the first. Woman cold, feeble, and without pains. Improved under rest and stimulation, with return of pains. Conjugate diameter 1 inch; transverse $5\frac{1}{2}$. Operation removed a boy of 7 pounds, who lived and was alive at the age of 14.

Woman bid fair to recover, and might have done so, as the wounds were healing, and there was no peritonitis, but for the fact discovered after her death, at the end of six days, that a young accoucheur had three times transfixed the rectum and wounded the promontory of the sacrum, under an impression that it was the fatal head, in an attempt to perform craniotomy.

It was certainly no fault of the Cesarean section, or of its operator, that the patient died.

5. 1860, New York City, operation by Dr. T. Gaillard Thomas. Woman white, aged 28, taken with eclampsia when near her full term of pregnancy. After twelve or thirteen convulsions, during a period of six hours, she became moribund, and Dr. Thomas operated upon her, but she died under the operation, the only instance on record where this occurred in our country. It once happened also in England. The fetus was dead.

As these are all the particulars we have of this case, we make no comments, except to say that the operation ought not to be charged with the fatal result.

6. 1860, November 3d, New York City, operation by Prof. Fordyce Barker. White woman, 38, with exostosis from sacrum, in labor 2 days, or about a day and a half too long. Conjugate, 2 inches, pulse 120 at time of operation, and 134 to 140 after it. Died of peritonitis in 97 hours, child living in 1871, and named "Cesarea." It weighed $9\frac{3}{4}$ pounds when delivered.

Had this woman been operated upon in from six to twelve hours after her labor began, she would have had three chances to one of recovery, the chief danger of peritonitis lying in the risk of incising the uterus late in labor. As there were traces of syphilis in the woman, this may also have made the case more unfavorable. Had Dr. Barker been called in early, as he should have been, he would have operated with a much better hope of success.

7. 1866, November 26th, Westchester County, N.Y.; operation by Dr. G. J. Fisher, of Sing-Sing. Woman black, 39—contracted pelvis, arm presentation—long in labor and much prostrated. Still, did well after operation for three days, when her husband came home drunk, quarrelled with her mother, and she jumped out of bed to protect her. This caused her death from shock and exhaustion in twelve hours.

But for this unfortunate occurrence, Dr. Fisher might have saved his patient. The Cesarean operation has to carry a load of responsibility in the way of death that does not properly belong to it.

8 and 9. 1867 and 1868, New York City; operations by Dr. Thomas C. Finnell. Both women German primiparæ, each having a sacral exostosis, each in labor 3 days, each operated upon *in extremis*, and each dying of exhaustion in 48 hours.

In but one point did the cases differ, as in No. 8 the child lived, and was called after "Macduff;" who being "*untimely ripped*," could not have been removed by the Cesarean section, which is not untimely, unless it be in the sense of lateness.

10. 1869, New York City, same operator. Girl black, 16, with deformed pelvis, conjugate $1\frac{1}{8}$, in labor 4 days, and almost pulseless, died in 24 hours of hemorrhage and exhaustion; which is not to be wondered at under the circumstances.

We cannot say that Dr. Finnell was unfortunate in the results of his operations, as these were to be anticipated under the circumstances; the misfortune rather lies in the truth that the accoucheurs did not appear to be aware of the fact that, in such cases, *delays are dangerous and generally fatal*.

11. 1870, January 1st, Kingsbridge, New York; operation by Drs. Paluel de Marmon and C. F. Rodenstein, on an Irish woman of forty, with a conjugate diameter of $2\frac{1}{8}$, and transverse $2\frac{1}{4}$, who had been in labor 44 hours, and was much exhausted when operated upon. She died of metro-peritonitis in 48 hours; the child lived.

12. 1871, November 23d, Albany, New York; operation by the late Dr. John V. P. Quackenbush, on a white dwarf of 30, with a deformed pelvis; after a labor of 3 days, two of which were under a midwife. Child destroyed by craniotomy; woman died of peritonitis in 72 hours.

13. 1874, March; New York City; operation by T. G. Thomas, on a white woman of 30, with a uterine fibroid diagnosed several months before. Was warned of the danger of pregnancy, and urged to report the same, which she did not do. Under care of midwife funis prolapsed and tore off; large fibroid of uterus; ver-

sion and craniotomy impossible; uterine incision closed with silver sutures; child dead; violent peritonitis in 24 hours, and death in 3 days.

But for the fact that all fibroid tumor cases have proved fatal after gastro-hysterotomy in the United States but one, this should have been a favorable operation, as it was done in good season. Gastro-elytrotomy was inapplicable, as the fetus was blocked up in the uterus.

We have given a résumé of thirteen cases, with two women and four children saved; a sad record, but one that could have been very nearly calculated upon beforehand, in view of the almost universal unfittedness of the subjects to bear the operation. The history of these cases shows a great want of knowledge as to the danger of delay on the part of the class of accoucheurs frequently called upon to deliver the lower Irish, German, and colored women in our large seaports, where they are fond of congregating. This is, however, not much to be wondered at, since we were once present at a consultation in which two leading obstetrical professors unhesitatingly recommended the Cesarean operation in a case of pelvic deformity, where the woman had been in strong labor for four days, and where, from the comparative ease with which one of them afterwards delivered her by craniotomy, it was evident that the operation was not required. The woman made a rapid recovery, but had the surgeon in consultation yielded, the patient would not have had one chance in four of being saved, although her child would have been alive.

In just such cases as this does the operation of gastro-elytrotomy come in as a valuable substitute for gastro-hysterotomy. This woman was still moderately strong, although four days wasting her strength to no purpose, under the care of a midwife who was ignorantly waiting for nature; but her uterus was in no condition to bear with safety a traumatic injury. It is true that such cases, and even much worse ones, have recovered, but the statistics of our country are very unfavorable in their lesson under such circumstances. Prof. W. H. Byford, of Chicago, remarked on September 27th, before the American Gynecological Society, that it was "very dangerous to open the abdominal cavity of a parturient woman." We are not of his opinion—this is not the chief source of dan-

ger in the Cesarean section; it is the incision of the uterus, and this is greatly increased by the continuance of labor beyond a few hours, especially if the uterine contractions are violent. Dr. Byford operated on a case November 14th, 1847, and the woman died in two and a half days, presumed of peritonitis. Why? She was in labor three days under two midwives, and later an accoucheur; had nodes on her shins, an exostosis of the ischium, pulse of 110, a flushed face, exhausted forces, and the waters had been discharged forty-eight hours. Just the case, in the future, for avoiding the danger of incising the uterus and removing the fetus by the sub-peritoneal section and vaginal laceration. We were glad to find that Dr. H. J. Garrigues, of Brooklyn, in his paper on "Gastro-Elytrotomy," before the society just quoted, laid particular stress upon the fact that the vagina could not with safety be cut, but must be torn, to avoid hemorrhage; as some of our trans-Atlantic brethren have fallen into an error on this point, in describing the operation, merely speaking of dividing the vagina, without special reference to the manner of doing it.

Although Dr. Thomas, as an argument to show the danger of the Cesarean section, went back 250 years in the medical history of New York City, and only found one successful case, we have never yet been able to find an instance of the operation in any section of the Union, as far back as one-third of this period. We must remember that one-hundred years ago New York was but a small town with about one inhabitant where she now has forty, and that she neither possessed the material to constitute a necessity for the operation, nor perhaps the surgeon who might be ready to perform it. Dr. Physick, of Philadelphia, has been called the father of American surgery, but he never operated in this way, and, in fact, declined a case which afterwards recovered under the knife of another. When emigration brought in the rickety women of the Old World, the necessity for gastro-hysterotomy arose in our northern cities; but prior to this the French surgeons of Louisiana were called upon to administer relief to slave women who had been the subjects of rickets in childhood, and had their pelves deformed thereby. The first puerperal-abdominal operation of any note in the city of New York of

which we have a record was that of Dr. Charles McKnight, about 1792 or 1793, in a case of extranterine pregnancy, for the removal of the dead fetus.

Fear and the statistics in English obstetrical works have made many believe that the Cesarean operation was a fearfully dangerous operation, and so to avoid it, have by postponement and futile meddling done all they could in a case to make the work of the surgeon of no avail. About seventy-five per cent of all cases requiring the operation in the end, have been thus treated before the operator was called in.

One-fifth of all our Cesarean cases have been dwarfs; a greater than ordinary necessity, therefore, for a very early operation. We instance one (No. 42) from our case-book, the woman being 23, and 3 feet 9 inches in height. She was in labor $4\frac{1}{2}$ hours only, recovered in 4 weeks, and her child lived. Operator, Dr. Charles S. Mills, Richmond, Va., 1856. Take another (No. 57): 4 feet 5 inches; in labor 2 hours, and already becoming exhausted; recovered, and is now living after 17 years. Operator, Dr. Barnes, Hanover, Northampton County, Pennsylvania, 1861. Contrast them with No. 90, 3 feet high; or No. 50, 3 feet 2: the first, over 2 days in labor, lived 2 days after the operation, and died of exhaustion; the second, 42 hours in labor, with 3 spent in craniotomy, to no purpose, died in $63\frac{1}{2}$ hours, of peritonitis.

There are two great general classes of surgical cases: one, in which the operator selects his own time, and with reference to its being a favorable one for the patient; the other, in which an emergency forces the operation upon him, in a way that may be very unfavorable for the case. Statistics based upon the latter are very unsatisfactory, as much more will often depend upon the state and health of the patient than the gravity of the operation. It is in this way we regard the Cesarean section. Although, under ordinary circumstances, by no means as dangerous an operation as extirpation of the uterus, primary amputation at the hip joint, and several others, it ought to be much less so in comparison than it is, and could be made so, if all accoucheurs and midwives were brought to understand the importance of an early operation to success. If all cases were subjected to the knife in a few hours after the commencement of labor, we should expect to advance the

proportion saved to 75 per cent of mothers and children, as this has been the result in the early cases in our collection, *i. e.*, 18 women and 21 children saved in 24 operations.

We have now to consider the advantages and disadvantages of the two methods of operation :

1. *Relative mortality.* This question is far from being settled by 5 operations with 2 deaths, as the first 5 Cesarean cases in our record saved 4 women. There is this much to be said, however: that the new operation would appear to be safer in the cases of women long in labor, whose uteri are then much more dangerous to incise than in the early hours of parturient effort.

2. *Relative simplicity of character.* Of the capital operations of surgery, gastro-hysterotomy is one of the most simple and easy of performance, and has been done on several occasions with the instruments of a pocket-case. Gastro-elytrotomy, on the contrary, is not at all simple, and requires an intimate knowledge of anatomy and great care in execution. It is a form of operation that will be chiefly confined to the surgeons of large cities.

3. *Operations repeated.* In our record of Cesarean cases, we have 7 women operated upon twice, and 1 three times, with 3 deaths. After 1 operation by gastro-elytrotomy, we believe that the peritoneal adhesions would be such as to prevent a repetition.

4. *Sequels.* Rupture of the uterus, hemorrhage from the incision, utero-abdominal adhesions, and intestinal strangulation in the uterine wound, are all avoided by the subperitoneal section. Pelvic cellulitis and abscess may take the place of these after the new operation, and the bladder may be opened or ureter injured.

We believe that each operation has its advantages, but do not believe that, in a series of early operations, there will be found any less rate of mortality in gastro-elytrotomy than gastro-hysterotomy.

We were first led to understand the true source of danger in the latter operation by a careful study of the results of laparotomy after rupture of the uterus, in our own country. We asked ourselves why such cases recovered so much more generally than those of the Cesarean class. We then com-

pared the mortality of the Cesarean cases subjected to an early operation, and when in favorable conditions, with those operated upon by laparotomy, and found a small percentage in favor of the former. We then examined into the causes of death in each, and thus, step by step, adopted the views we now hold. We hear much of the dangers of hemorrhage after gastro-hysterotomy, although but comparatively few die directly from it; to avoid it, the uterus should be opened while it still possesses a vigor of contractility. The great source of danger is from septic poisoning, metro-peritonitis, or uterine phlebitis, originating in an organ which has been incised after it has become injured by long-continued action tending to atony, a state resembling contusion, or a condition of decided pathological change, as in case 3 of this record. As a general rule, the subjects for the Cesarean operation are much below the physical average, and this of itself makes it all important that they should have all the advantages of as early an operation as possible, before their little strength is wasted.

713 LOCUST ST., OCT. 1ST, 1878.

THE FEMALE GENERATIVE ORGANS IN THEIR MEDICO-LEGAL RELATIONS.¹

EARLY VIABILITY—PROTRACTED GESTATION—EARLIEST AND LATEST AGES AT WHICH WOMEN ARE CAPABLE OF CHILD-BEARING—SUPERFETATION—PRIVILEGES OF PREGNANCY—MULTIPLE BIRTHS.

BY

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For the present paper, I have chosen but a few of the many important questions which concern the obstetric legist. I hope to be able to contribute again one or more articles concerning the general subject of the Medico-Legal Relations of the Female Generative Organs. If the opportunity be accorded me of taking up this subject again, I hope to consider somewhat in detail the signs of recent delivery, of virginity, of

¹ Read before the Cin. Obst. Soc., November 14th, 1878.

nulliparity, the diseases whose traces resemble those left by parturition, the medico-legal aspect of the Cesarean operation, and the conditions under which it is legally, medically, and morally proper to induce premature labor. The discussion, too, should include the diagnosis of pregnancy, a brief review of abortion and infanticide in their medico-legal aspect, and a consideration of supposititious and posthumous birth. It should extend to an inquiry concerning the possibility of a woman being delivered during natural sleep, or a state of insensibility, and remaining unconscious of the event. It should consider the possibility of sexual intercourse with a woman during her sleep, the signs of rape, and what is requisite to complete that offence. It should embrace an acquaintance with the malformations and deficiencies of the female genital organs, constituting in a medical view a bar to marriage. Not infrequently the advice of the physician is sought on this point, but more frequently is his testimony required in cases of divorce, where sexual incapacity or sterility is alleged to exist. Rarely his evidence is required to determine doubtful sex, as in case of the supposed hermaphrodite, whose right of suffrage may be denied because he is not of the male gender. Certain phenomena attending the development of puberty in the female, conditions liable to affect impregnation, the value of the corpus luteum as a sign of gestation, feigned pregnancy, legitimacy, and causes of premature labor are all topics of medico-legal importance.

The obstetric jurist is often called upon to give an opinion concerning the intrauterine age of a fetus which may have died in consequence of having been expelled before it had attained vitality sufficient to support an independent existence. An opinion may also be sought concerning its uterine age, in case it survive a premature birth. Hence the necessity for him to be well prepared to state the general appearance, average size, weight, and length which the child exhibits at each month of its fetal life.

In another light, the female organs of generation claim our careful study. Obstetric malpractice may be alleged, and the accoucheur suddenly menaced with ruin by a suit for pecuniary damages. It matters but little whether he is culpable or not, for he is not tried by a jury of his peers either in medical or

general intelligence, and the verdict rarely bears sequential relation to the medical evidence.

Malpractice in obstetric cases may be charged as due to the obstetrician conveying septic poison from one case to another, absenting himself for a long period during the progress of labor, leaving his patient without ascertaining that it is reasonably safe to do so, and failure to discover any apparent congenital deficiency or conformation of the child. Vesico-vaginal and other kinds of fistulæ, perineal rupture, and rupture of the uterus, have each given rise to actions for malpractice. Any injury, in fact, which may be inflicted upon the mother by forceps, cephalotribe, perforator, or other instrument used in delivery, as well as alleged improper subsequent management of the case, may form a basis for suit for damages.

It may be charged that the medical attendant has communicated syphilis to his patient during parturition, and actions for damages have been instituted on this ground. Upon the other hand, the obstetrician who contracts syphilis in consequence of delivering a woman affected with that disorder may maintain an action for damages against her, provided he was not previously informed of his risk.

In regard to the infant, a fracture of the arm, leg, or clavicle, for example during version or extraction, may be malpractice, and the same is true concerning any injury that may result to it from either commission or omission, due to ignorance or negligence on the part of the accoucheur.

Obstetrics having assumed the prominent place it now occupies, the laity naturally expect, and indeed demand, greater skill in its practice than before its elevation. Courts, too, justly require at the present day a greater degree of professional excellence from the obstetrician than was formerly required of practitioners of this specialty. And as our knowledge pertaining to this subject continues to increase, new conceptions of our duties will become manifest, and we will then be held to a still stricter accountability. The better the profession is educated in any specialty, the more is required of it in that specialty. The moral and legal responsibility of the members of the medical profession increase *pari passu* with skill and knowledge attainable. So much thought to-day converges upon the diseases of women, such rapid advances are being constantly made

in their study, that it is safe to predict the specialist of a quarter of a century hence will be as far in advance of us as we are ahead of those who taught and practised midwifery fifty years ago. In the near future, parturition will be made even shorter and less painful than now, the mortality of mother and child will be less, and the accoucheur will be held to a corresponding degree of legal responsibility.

But leaving all the topics above enumerated, and a few others of kindred character, for probable future discussion, I will consider, but not with prolixity, the specific points suggested in the caption of my paper. Before doing so, however, it may be better to impress the importance of a subject too much neglected by many of those who cultivate the science and art of obstetrics as a specialty. Too often the specialist called to enlighten the court—to testify concerning the legal relations of his department—is rendered miserable in himself, and absolutely inefficient to the ends of justice, by lack of knowledge concerning the legal bearings of his examination. He should be prepared by some previous knowledge of the usual course of giving evidence, and for the difficulties and objections which may arise while testifying. He may be fully acquainted with the subject in dispute—may know that by his particular instruction he is well qualified to inform the court on the most important points relating to the case, yet he is liable to become embarrassed by the difficulties which a man of real acquirement feels, when impressed at once with the novelty of his situation, a sense of the great duty he is about to perform, and a consciousness that the statements which he is to utter may be obscured, perverted, or suppressed by technicalities for which he is unprepared. Indeed, under such circumstances, the witness is placed in a situation almost as painful as that occupied by the criminal.

Returning to the special topics for discussion in the present article we inquire:

What is the shortest period of pregnancy compatible with viability of the offspring?

Apocryphal accounts are numerous of infants having survived birth at very early periods. Doubtless in many of these instances the mothers were mistaken as to the date of conception; in others, the story of a short pregnancy has been invented to do service in case of incontinency. Reference to a case of

this latter kind is made in Woodman and Tidy's "Forensic Medicine" (p. 616), in which the Rev. Thomas Elder, a clergyman of Whithorn, Scotland, was deposed from the ministry in consequence of a living child having been born not quite four months subsequent to marriage. This occurred in the beginning of the eighteenth century, and it appears from the report of the case that physicians of that period were not more scrupulous about making medical certificates than many of the present day. Drs. Pitcairn, Preston, and Drummond declared over their signatures that a child born in the beginning of the sixth lunar month may be alive, and continue in life, and principally upon this certificate the sentence was finally reversed. Upon the authority of Capuron we learn that Fortunio Liceti was born at four and one-half months, and survived his birth 24 years! In the case of Cardinal Richelieu it was decreed by the parliament of Paris that a five months' child possessed that capability of living to the usual period of human existence required by the law of France to establish its right of primogeniture.¹ The Code of Napoleon, however, fixes 180 days as the minimum period at which a child can be born viable; *i. e.*, with a capacity to live after its birth. The old Roman law, based upon the dictum of Hippocrates, prescribed 182 days as the shortest possible period between the dates of conception and birth of viable offspring. The Scotch law allows that an infant born at 168 days may be viable and legitimate. By our law, as well as by that of England, there is no period arbitrarily fixed at which the child is to be pronounced viable or non-viable. Such matter is to be determined by evidence, and this manifestly must be mainly of a medical character. The American obstetric jurist has only to consider the physiological signs of life after birth, such as crying, pulsation of the heart, or twitching of any of the muscles of the body. According to Lord Coke, "motion, stirring, and the like" are proofs of live-birth; and though it has been claimed that such slight movements are really "the remains of uterine or fetal life," yet it has been judicially decided that they are signs of live-birth.

The evidence of the obstetrician in these cases often affects the reputation of the mother for chastity. A woman may have a child shortly subsequent to marriage, and upon his testimony

¹ Capuron, page 195.

as to the development and appearance of the offspring depends the solution of the question as to whether conception took place prior to or after marriage. The same question may present if a married woman give birth to a child during the absence of the husband.

Or, a woman may marry again just after the death of her husband, and if she be soon delivered of a child—say at six or eight months—it may become a query whether the offspring is of the dead or living husband. The question may also arise in case of re-marriage just after divorce. Of course, it is admitted that the customs of civilized society are against marriage after such brief interval of widowhood as indicated, but it does sometimes happen. I am cognizant of an instance occurring in this city in which the widow married again the next day after her husband's funeral.

To sum up what is admitted in regard to infant viability, I may state that, at the present day, all agree in the view first promulgated long ago by Haller, "that the capability of living in an infant increases in the ratio of its maturity, or in proportion as it advanced toward the natural period of delivery." It is scarcely necessary, then, to refute the ancient notion which in most sections is still a popular belief, that a seven months' child is more likely to survive than one born at eight months.

An infant born between six and seven months may possibly, though not probably survive.

Mr. Smythe's case, in which an infant born at the 147th day lived 12 hours, and Dr. Barker's case of a child at the 158th day, are perhaps the best known examples of viability at such extremely early life.¹ In the latter, the child had, at the date of the latest recorded observation, attained the age of 11 years, and it is one of the very few attested instances of any considerable age having been reached after birth at such an early period of intrauterine existence. Indeed, we know of no other case, except that already quoted from Capuron (the veracity of which is doubted by some), of a child being reared after birth prior to the fifth month; and before the seventh it is very improbable that life will continue long.

An opinion as to the viability of a child should be based

¹ Both these cases are given in Taylor's Medical Jurisprudence.

principally upon the physiological signs of life, rather than upon its intrauterine age.

How long may the term of utero-gestation be protracted?

This question, more frequently than the former, is propounded to the medical witness. The normal duration of pregnancy is from 275 to 280 days—most observers believing the latter, or 2 or 3 days less, to be the natural period. But the usual duration of pregnancy is not so arbitrarily fixed but that there may be some variation. Concerning the time which it may be prolonged beyond the natural period there is no exact accord of opinion, but it seems probable that too great, rather than insufficient, latitude is allowed as possible.

The subject may assume grave importance in deciding questions of legitimacy. In England, still another circumstance, namely, a child's right to property, may render it desirable to ascertain the longest period of pregnancy. Besides this, there may be involved the honor and happiness of families in determining this question. One difficulty—a difficulty well known to the profession—relates to the fact, now well established, that when fecundation takes place, it does not always occur at the exact date of coition; hours and even days may elapse after insemination before the spermatozoa come in contact with the ovum. This statement is confirmed by observations upon the lower animals, and it is still better established by the researches of Sims, Flint, Jr., and S. R. Percy. Marion Sims discovered spermatozoa in the cervical canal six days after intercourse. Prof. Flint, Jr., saw them "in motion on the surface of the ovary eight days after," and "Dr. Percy discovered them alive in the mucus issuing from the os uteri, eight days and a half after the last coitus."¹ Barnes also coincides with this view, and, indeed, I know of no respectable authority who expresses an opposite opinion.

Irregular menstruation is another element that may have to be considered when attempting to determine, in a given case, the duration of pregnancy. If, as sometimes happens, a woman ceases to menstruate a month or two before she becomes pregnant, the accoucheur may be led to the belief that she has been *enceinte* ten or eleven months. He will, of course, come

¹ Leishman's Midwifery, page 178.

to this conclusion if he bases his calculation from the date of the last appearance of the menses.

Pliny relates an instance in which succession to an infant born after thirteen months' utero-gestation was judicially allowed, but he explains that this was so declared because no time appeared by law "*quoniam nullum certum tempus pariendi statum videretur.*"

In the celebrated and oft-quoted "*Gardner Peerage Case,*" which was tried some fifty years ago, it was decided that the legitimacy of a birth at 312 days shall not be allowed. It must be confessed, however, that the decision in that celebrated case was founded more upon moral than medical testimony. Sixteen of the most eminent London obstetricians gave evidence concerning the possibility of pregnancy being so long protracted, and, as is too frequently the case with medical experts, they differed widely in their views.¹

Sir James Simpson and Dr. Ashwell have each reported a case in which pregnancy terminated on the 300th day. Simpson also reports three other cases in which he had good reason to believe that gestation was prolonged to 319, 332, and 336 days respectively. Meigs claimed to have had a case in his own practice where he was confident that 420 days elapsed between conception and labor! The statistics of Reid, Merri-man, and Murphy upon this subject are to be found in nearly all the text-books. Dr. James Reid, in a table of 500 cases of mature births, reports 14 at from 302 to 315 days. In Dr. Merriman's list of 150 cases, 5 were delivered in the 44th week. But both these observers made their calculations from the last day of menstruation, the precise date of conception being unknown.

The decisions of American courts allow the possibility of a more protracted gestation than is favored by those of England. In a case which was tried in Cambria County, Pa., many years ago, the defendant was indicted for fornication and bastardy, and though the child was born 317 days after the alleged intercourse, yet the jury returned a verdict of guilty, basing their finding upon the medical testimony. In another case of bastardy, tried also in the Commonwealth of Pennsylvania, the defendant was upon conflicting medical testimony found

¹ Vide Dr. Montgomery on the "*Signs and Symptoms of Pregnancy.*"

guilty, although, according to the testimony of the prosecutrix, pregnancy must have continued 313 days. Many adjudicated cases relating to protracted utero-gestation may be found in Dr. Taylor's work on Medical Jurisprudence, a volume from which the facts relating to the two preceding cases are borrowed.

In an English case, tried February, 1870, Dr. Barnes, when asked concerning the probable legitimacy of an infant, born 307 days after last intercourse with the husband, stated that in his opinion it was exceedingly improbable that pregnancy should last 300 days, but he would not affirm that such a protracted gestation was impossible. Dr. Tyler Smith, an authority noted for conservatism and caution, coincided with this opinion.

Cases of pregnancy have been reported as lasting a much longer period than any of those above quoted, but many of them are ancient, most of them rest upon the unsupported statement of the mother, and none of them are very well authenticated. A few examples may be here cited, some of which are so wonderful as to excite admiration for the credulity of any medical man who could ever have put credence in their claims for veracity.

From Aulus Gellius, book third, and chapter 16, we learn that the emperor Adrian, after consultation with the physicians and wise men, decreed, in a case which came before him, that where the woman was of chaste manners and irreproachable conduct, the child born eleven months after the death of the husband was legitimate. The Decemviri, under the Roman law, decided that the infant may be born in the tenth month. Paul Zacchias, physician to Pope Innocent X., declared that birth may be retarded to the tenth month, "and sometimes for a considerably longer time."

A case was decided in the supreme court of Friesland (a province in the northern part of the Netherlands), October 27th, 1634, in which a child was pronounced legitimate, though not born till 333 days from the husband's decease.¹

The parliament of Paris was gallant enough to come to the rescue of a widow's reputation, by declaring in favor of the

¹ Vide Sands, *Decisiones Frisicæ*, Book iv., as quoted in Paris and Fonblanque's *Med. Jour.*, Part ii., Appendix, page 219.

legitimacy of her child, though born during the fourteenth month of gestation.

A case, too, is recorded by Bartholin, of an unmarried woman of Leipzig, delivered in her sixteenth month of pregnancy.

But aside from all these apocryphal accounts, some of which are so wonderful as to render it useless to challenge investigation, I may state that obstetricians of the present day are agreed that the period of utero-gestation may be slightly protracted. Further, I believe that the accoucheur would not be justified in denying under oath the *possibility* of a pregnancy lasting 307 days, or even a little longer, although in my opinion there are no sufficiently authenticated cases on record of such protracted gestation. Of course, this statement does not apply to extruterine gestation, which usually terminates during the first five months, although exceptionally it may continue many years. Burns relates the case of an extruterine fetus having been retained twenty years; in the Philosophical Transactions is recorded a case of forty years' duration, and I have been informed that, in one of the volumes of the Transactions of the New York State Medical Society, there is the report of a fetus of this description having been retained in the abdomen of the mother for a period of fifty years.

The civil code of France provides that 300 days shall constitute the longest period at which the legitimacy of an infant shall be allowed. The Scottish law allows 300, and the Prussian 301 days. In England, and in our own country, the period of gestation is not fixed by law, and decisions are based principally on the evidence of obstetric experts, although precedents may, and often do, form a minor factor in deciding the question. This is certainly a wiser and juster jurisprudence than that which arbitrarily limits to a day the duration of pregnancy.

In this connection there is another vexed question, viz.: whether children born after protracted gestation are, in general, larger than those born at the normal term. Naturally it would be expected that they should be above the usual size, and my own experience upon this point confirms this view. Dr. Murphy, in the "Obstetric Report" for 1844, claims that over-mature children are no larger than those born at the usual time, and this view has been confirmed by Dr. Rüttel, who is quoted upon this point by Dr. Taylor. The logical inference deduced

from this opinion is that, when the fetus has attained a certain age, it ceases to grow. Children born before the termination of the normal period, and yet presenting the appearances of maturity, are exceptional. The editor of the *Obstetric Gazette* relates, in the number for August, 1878, the particulars of a case tried very recently in the Court of Common Pleas for Warren County, Ohio, in which the plaintiff testified that she gave birth to a male child, *apparently fully matured*, on the 26th of April. She charged "that seduction with sexual intercourse occurred on and subsequent to the night of the previous 30th of August; that is, 240 days from date to date." The doctor was subpœnaed as an expert to testify what, if any, signs of maturity would be presented by a child born at the 240th day, also as to the period of earliest viability, etc. Unfortunately the article does not inform us whether a verdict was returned against the defendant as guilty of seduction and bastardy as charged.¹ Not only are appearances of maturity in children prematurely born extremely rare, but equally rare are those cases in which the child is not fully developed till a considerable period beyond the average.

What is the maximum, and what the minimum, age at which a woman is capable of bearing a child?

Ordinarily, the beginning and the cessation of menstruation mark the commencement and the close of the period of child-bearing. There are, however, numerous exceptions to this general rule, and many well attested cases of childbirth prior to the establishment of menstruation have been recorded, and equally well authenticated instances have been reported of pregnancy occurring subsequent to the apparent menopause. It must be admitted, too, that menstruation occasionally may continue to an advanced age, and, as a corollary, that conception is liable to take place so long as the menstrual flow continues. However, we must not be deceived by statements respecting those cases in which it is claimed that the monthly flow continued very late in life, since examination has shown that in some of these cases the flow was not a true menstruation, but

¹ A note from the editor of the *Obstetric Gazette*, received since the above was written, states that the judge practically decided that the defendant was father of the child, but the decision was rendered principally upon other than medical testimony. It was therefore not a fair decision on merit, being complicated materially by extraneous evidence.

merely a bloody discharge from the vagina, or from a diseased womb. This remark will apply with equal force to many cases of menstruation authentically reported as having occurred in very young children. Still, after having eliminated all these doubtful cases, there yet remains a residuum of examples where genuine menstruation has occasionally—though rarely—been witnessed, both at a very tender age and in advanced life.

Though conception may take place before the establishment of menstruation, yet it cannot occur before puberty. The commencement of the menstrual function and the development of the signs of puberty are not always synchronous. Not infrequently is this function delayed months and even years after all external signs of puberty have been well established. Of course, in such exceptional instances, conception may take place at any stage between puberty and menstruation. As there is no fixed age at which the signs of puberty are developed, *it is therefore impossible to determine definitely the earliest age at which pregnancy may result.* Puberty takes place, as is well known, considerably later in northern than in southern latitudes. For example, it is related that in Hindoostan girls begin to menstruate at eight or nine years of age, while in Lapland, the menstrual flow does not manifest itself till the twentieth or twenty-second year. There is reason, however, to believe that by some the influence of climate has in this respect been over-estimated. The period at which puberty appears is also to a considerable extent controlled by heredity, individual temperament, habits of life, and other moral and external circumstances.

Early in the present century, the *Maternité* at Paris had a few cases of delivery occurring in girls but thirteen years of age, and during the "Reign of Terror," a pregnant girl, aged eleven years, was admitted to that hospital. "Schurigius states the case of a Flemish girl, who was delivered of a son at the age of nine years; and in the notes of Metzger, several instances are related where conception had occurred under the age of ten."¹ The case of Carus was that of a child who menstruated when but two years of age, became pregnant at eight, and lived to an advanced age. The *St. Louis Clinical Record* contained lately a translation from the *Bulletin de*

¹ Vide Paris and Fonblanque, vol. i., p. 257.

l'Académie de Médecine de Belgique, giving an account of a girl at eight years of age becoming *enceinte*. The case had been observed by Dr. Molitor, at Oberpallen, from the date of her birth. She was born at Oberpallen, October 27th, 1868, and when four years of age became "regular." At eight she had already had frequent sexual intercourse, and became pregnant by her own cousin.

So far as I can discover, there is no well attested case where conception has taken place prior to the eighth year. We are told of many anomalous instances of menstruation at a much earlier age, but none in which pregnancy is authentically reported to have taken place. "The cases of Jaubert, of Montpellier, delivered in her ninth year, and that of Symes, of Boston, in her tenth year," are striking examples of juvenile motherhood. In the *Medical Gazette* (vol. xiii., p. 751) may be found the history of a case in which a girl was delivered of a full-term child when only about twelve and one-half years old. She began to menstruate when ten years and two months of age, and at the age of eleven years and eight months first had intercourse with her seducer, a man of forty-five. Under the English law, it is a misdemeanor to have carnal knowledge of a girl between ten and twelve years of age, even with her consent, and in this instance the prisoner was convicted and sentenced in accordance with the penalty prescribed by law.

In our climate, signs of puberty are not infrequently manifested in girls at the tenth or eleventh year, and occasional examples of menstruation at this period have come under our notice in private practice. Dr. James D. Blake, of Palmyra, Iowa, published not long ago in the *American Medical Weekly* the history of a "case of a white girl, twelve years of age, giving birth to a mulatto child weighing twelve pounds."

Upon the other hand, it is impracticable to establish the age beyond which menstruation, and consequently the capacity for child-bearing, is always impossible. Dr. Taylor mentions a case, quoted by Orfila from Bernstein, in which a woman bore her first child at 47, and her last at 60 years. She continued to menstruate until her ninety-ninth year. Nor is a woman always sterile after cessation of the menses. On the 17th day of May, 1877, I delivered a woman in her forty-ninth year of

a healthy child at term. *She had not menstruated for 2 years,* and, until a few weeks before her confinement, could not be convinced that she was pregnant. Nor has menstruation in her case returned since her accouchement. Another lady, also in her forty-ninth year, I attended in her sixteenth labor about two years ago, but in her case there were no signs of the menopause. In Vol. I. of *The Obstetrical Journal*, at page 835, are the notes of a labor occurring at the age of 50. Marsa, a physician of Venice, reports the case of a woman æt. 60, who, at that age, gave birth to a daughter, and naïvely adds that he had previously treated her for what he believed to be ovarian dropsy.

And so we might continue to quote almost *ad infinitum* well authenticated examples of extremely early and late pregnancies. The best that the obstetric jurist can do when giving testimony upon this point is, to weigh well all the facts pertaining to the case in question and base his opinion, not upon any one of them alone, but upon all taken collectively. No inflexible rule will apply to all these cases, but each must be decided, in a great measure, upon its individual history. At the same time he should be careful about denying the possibility of pregnancy occurring exceptionally in females of a very early or very advanced age. His testimony on this subject may be requisite in trial for a misdemeanor, as in the case of pregnancy occurring in a girl under 12 years of age. There are other instances in which skilled testimony upon this question may be required, but most frequently is it demanded in cases of disputed legitimacy.

The brief limits to which I wish to confine myself in discussing late pregnancy allow little more than mere reference to an able paper upon this subject by Prof. Fordyce Barker.¹ Dr. Barker critically examines many of the so-called "authentic cases" of pregnancy in advanced life, and in some instances shows conclusively the utter worthlessness of the testimony upon which they rest. Perhaps the most interesting example related by him was one with which he was personally familiar, the woman claiming to have given birth to a child at the age

¹ "The Age of Women, when the Capacity for Child-bearing Ceases;" by Fordyce Barker, M.D. Read before the New York Medical Journal and Library Association, November, 1874, and subsequently published in the Philadelphia Medical Times.

of 58. The death of the infant, shortly succeeded by the death of the mother, diverted the descent of large property which she had inherited, and gave rise to a prospectively interesting lawsuit, which had the effect quickly to establish the fact that the woman had not been pregnant at all—but had borrowed the child for the occasion. Doubtless, if all wonderful accounts of old women giving birth to children were subjected to similar legal scrutiny, their number would be speedily reduced to a more truthful proportion.

The latest age which Dr. Barker names at which in his own professional career he has known delivery to take place is 52 years and 2 months. At the conclusion of his paper he says: "I feel warranted in stating the proposition that the laws of physiology, the experience of mankind, and the decisions of courts of law justify a medical witness in declaring that a woman over 55 years of age is past the period of child-bearing."

From undoubted authority I learn that in 1877, in a Chancery case in England, the Vice-chancellor quoted at length from Dr. Barker's paper, and avowedly based his decision thereon. Notwithstanding the high authority above quoted, and decisions of courts based upon medical evidence pertaining to this subject, I still think that the medical expert is not justified in pretending to fix arbitrarily the exact age beyond which pregnancy is always impossible. He may be able to do this in the individual cases concerning which he is called to testify—cases which he may have the opportunity to examine or get some knowledge of—but it would seem unsafe to fix an inexorable rule or law applicable alike to all women.

Is superfetation possible? And what is meant by that term?

Superfetation is a sort of sequence to legitimacy and is sufficiently related to it to suggest its consideration in this connection. By the term superfetation is usually understood a second conception taking place within a womb which already contains an embryo. I cannot accept the arbitrary view of Seanzoni who insists (as quoted by Leishman) that superfetation "must be held as occurring *after* the period at which the decidua vera and decidua reflexa come into close contact." As this event does not take place till the second or third month, it is evident that the limit is fixed at too late a period. Nor

is this line, so sharply drawn between superfecundation and superfetation by the author just quoted, generally recognized by writers when attempting to distinguish these two forms of impregnation from each other. Indeed, it is difficult to draw a line of demarcation between the two; what by one might be regarded as merely a superfecundation, might by another be viewed as true superfetation. Perhaps few questions pertaining to conception have given rise to severer controversy than the query of the possibility of superfetation. Nearly all ancient writers on medicine and philosophy believed in the possibility of this form of pregnancy. In the classics is recorded an example in the case of Iphicles and Hercules who were the sons of Alcmena by Jupiter and Amphitryon. Aristotle relates the particulars of a case occurring to an adulteress, who produced two sons who, as they arrived at manhood, resembled, one the lover, the other the husband. Hippocrates and Pliny entertained no doubt concerning the occurrence of this form of gestation.

A striking instance of super-conception is related by Buffon (Foderé, vol. i., p. 482). He states that a woman of Charleston, South Carolina, was in 1714 delivered of twins, their births occurring within a few minutes of each other, but to the dismay of the midwife, one was white, the other black. The mother, considering the evidence too strong to be controverted, explained the phenomenon by stating that a colored man had entered her room just after she had enjoyed the embraces of her husband, and by threats accomplished his purpose. There are many examples of the converse of Buffon's case, in which negro women have given birth to twins of different male parentage, as rendered obvious by the marked contrast in color and features of the respective infants. Such examples were more common in the southern portion of the United States prior to the abolition of slavery than since, and Dr. Beck gives a long list of reference to such cases, most of which are duly authenticated.

Paul Zacchias believed implicitly in the anomaly, and in a certain legal action his testimony secured for a child its rights of inheritance and preserved the reputation of the mother. Foderé (vol. i., p. 484) relates the case of a woman of Turin, who, in 1797, bore three children at intervals of fifteen days

respectively. Woodman and Tidy (p. 723), state that they "know of more than one case in which there was an interval of more than a week between well-formed mature twins." In the "Medico-Chirurgical Transactions" (vol. ix., p. 194) is recorded the fact of "the expulsion of a blighted fetus and placenta at seven months," a child being still left within the uterus which was born two months later. In the "Transactions of the London College of Physicians" (vol. iv., p. 161), the history of a case is given in which an Italian woman gave birth to a couple of infants, apparently of mature development, one being born three months after the other. The case of Dr. Desgranges, of Lyons, familiar to all who have reviewed the literature of this subject, is certainly one of the most curious on record. In the *Edinburgh Medical Journal* of January, 1865, may be found a paper on the subject of superfetation, citing "19 cases in which the interval between one birth and another has been 309 days or less." The author of the paper, Dr. Bonnar, fixes the fourteenth day after delivery as the earliest at which a fresh conception can possibly take place.

It sometimes happens, though rarely, that a woman pregnant with twins may abort one, the other remaining in the uterus until the close of the natural term, and then be born alive and healthy. An instance of this character is recited above. It is possible that such a case may be mistaken for one of genuine superfetation, especially if the abortion does not take place till the fetus has been quite well developed.

Well authenticated cases of double uterus have been reported, and attempts have been made to explain all cases of superfetation by referring the cause to bipartite uteri. But it is not necessary that such anomalous condition should exist to account for superfetation, since it has been proven to exist in the uterus normally formed. In one of M. Bigand's cases, a second mature child was born four and one-half months after the birth of the first. Upon the death of the mother, autopsy revealed a single normal uterus. It seems reasonable, however, to suppose that, where the double uterus exists, double pregnancy would be more likely to take place than when that organ is normally formed. In most instances of bilocular uterus which have been reported, the partition which makes two compartments of the womb divides also the vaginal canal into two

chambers. Catti, a physician of Naples, was the first to observe and describe this malformation, since which time the anomaly has been observed and reported by numerous authors.

In a certain proportion of cases claimed as examples of superfetation, they are not genuine, but merely instances of twin pregnancy, one being retained after the birth of the other; another proportion is accounted for by the interval which, as we have seen, sometimes elapses between insemination and conception; but by far the larger proportion is explained on the hypothesis that the observation recorded has not been taken with accuracy. Still, after excluding these and all other elements of distrust, there remain cases inexplicable except through the admission that another conception has taken place in a womb already containing a partially developed ovum or fetus. The rarity of these examples relates more to the usual suspension of ovulation during pregnancy than to any mechanical impediments which may exist to the passage of the spermatozoa.

Zacchias was, perhaps, as nearly correct in his views upon this subject as are the most enlightened physiologists of the present age. He held that superfetation could occur only during the first two or three months of pregnancy, and that after such period the development of the fetus renders it impossible. It is, we believe, now admitted by the majority of physiologists that superfetation is possible at a very early period of gestation, and that twin births are also sometimes the result of conception occurring at two different connections separated by an interval of a few hours or days. But superconception resulting in the birth of twins is different from the phenomenon under consideration. I draw the sharp distinction that, to constitute *true* superfetation, it is necessary that the woman should not only bear *two* children, but their births must take place at different times—the deliveries being separated by an interval of time sufficient to preclude the possibility of their being twins. The children must be of different ages, and while the mother nurses one, she must be pregnant with the other. These conditions I regard as essential to true superfetation.

Physiology has shed but little light upon this whole subject, and it is so beset with impediments as to render the task of its scientific investigation peculiarly difficult. Nearly all our

present knowledge concerning it is derived from its study in a clinical aspect.

It is not a subject of mere abstract speculation, as might appear at first thought. It may have important judicial bearings, as in the case already cited, where was sought the testimony of Zaccchias, the most eminent medico-legist of his day. Or, suppose a woman's husband die and she shortly marry again. Suppose, also, that seven months thereafter she give birth to a child apparently mature, and two months later to another mature child. The question then, in this illustrative case, might arise as to whether the first child was the offspring of the first, or of the second marriage. Precisely this kind of a case is recorded in the *Medical Gazette*, Vol. xxxvii., p. 27, and many others of a similar nature may be found scattered through medical periodicals.

What are the privileges of pregnancy?

A woman condemned to death may plead pregnancy in bar of execution. In the United States it is the practice of the courts, when this plea is made, to appoint a medical commission to examine and report whether the prisoner is in fact *enceinte*. But under the English statutes, when this question is raised, it is referred for solution to a jury of matrons. Formerly their verdict was final in such cases, but during the present century it has become the practice to consult also the physician. The common law of our country is the same as the English statute upon this subject, but many of our States have statutory provisions more in accord with the civilization of the age than is that relic of barbarism which prescribed the matron jury, and hanged all capitally convicted woman who had not felt quickening.¹

Another immunity which a woman may claim on account of pregnancy relates to her attendance as a witness or principal in the trial of a cause. Under such circumstance it may become necessary for the physician to testify as to whether she is really pregnant, and if so, whether it would be unsafe for her to attend.

In the case of *Holeman vs. State of Arkansas*, is an instance of a woman convicted of a penitentiary offence claiming the

¹ This topic is treated at length by the author in a paper published in this JOURNAL, for January, 1878.

privilege of a new trial, alleging pregnancy as a cause. It was decided, however, that pregnancy was not a cause for a new trial (vide vol. xiii., p. 105).

Among the ancients, greater immunity was allowed to pregnant women than is accorded them in the present age. We are told that by the Athenians the murderer was spared who took refuge in her dwelling. The sovereign tribunal of the Areopagus decreed that the woman condemned to die should not be executed until after her delivery. In Egypt, the same practice was in force, and for the same reason, that is, that the infant might not be destroyed for the crime of its mother. Among the ancient Persians, it was the custom for the king to have distributed pieces of gold to every pregnant woman, and even the vigorous Mosaic law was abated, that forbidden food might be allowed to the woman in this condition whose appetite might crave such prohibited viands.

How many children can be produced at one birth?

From statistics we learn that twin cases occur about once in eighty labors, and that triplets are far rarer, there not being more than one case in every five thousand pregnancies. In "Cazeaux's Midwifery" are collected the notes of a few cases of plural births. A case of quadruple pregnancy terminating at the seventh month is quoted from M. Bourdois, one from Kennedy of a woman who at the third month aborted five embryos, and another from Pigné of quintuple pregnancy. Also the case of Dr. Hull, of Manchester, in which a woman at the fifth month aborted five fetuses, and another of Dr. Kennedy's, where a woman at the tenth week aborted five embryos. Chambon records a case of five infants having been born to a woman at one birth, all of which were viable. Dr. Ramsbotham has also collected three cases of quintuple pregnancy. Search in medical periodical literature discovers quite a number of records of cases of quadruple, and a few others of quintuple pregnancy.¹ Dr. Osborne, an English physician of the last century, declares "that he has distinctly traced as many as six fetuses in an abortion." Tanner, in his "Signs

¹ Since this paper was put in type, I noticed the following in the New York Medical Record for Nov. 30th, 1878:

"A woman in Lägerdorf, near Kiel, Germany, was delivered of five living children, 3 boys and 2 girls, on September 29th. One of the children died October 1st, but the other four are doing well."

and Diseases of Pregnancy," quotes from the *American Journal of the Medical Sciences* (vol. xii., p. 218) the case of a married woman who, on the 30th December, 1831, was delivered of six female children, all living. They died in the evening of the day of their birth. The author quoted seems to place credence in the statement.

The most astounding statements were in ancient, and even in more modern times made and implicitly believed by many of the most learned in those days. Pliny tells us that in Egypt seven children were frequently produced at one birth; Albu-easis, that he has known seven, ten, and in one instance fifteen well-formed fetuses to be expelled. On the authority of Petrus Borellus, we learn that the wife of a nobleman in 1650 gave birth to eight children. In an old medical book which I have had the opportunity of consulting, and which bears the imprint "London, 1693," I find reference to the case of "A. Margaret, the Countess of Holstein, who, in the time of the Emperor Henry VII., had 364 at one labor." Also that of another countess in the time of Frederic XI., who had 514 at one birth. The latter instance seems to test the old author's credulity, for he remarks that the number is so great as to appear incredible!

Tanner relates that the estimable Bishop Otho solemnly asserted that his niece had given birth at one time to 1,514 children, "a miraculous offspring," all of which he duly baptized. Our medical author ingeniously contrives a loop-hole for the escape of the old Bishop, by concluding that "it may be surmised the simple prelate performed the sacred rite on a large bunch of vesicular hydatids, which he mistook for aborted ova."

But descending from the flights of imagination, leaving these cases to the annals of fiction where they properly belong, an attempt may be made to discover what is really the greatest number of children which have been by competent observers reported as produced at one birth. Without pretending to determine the exact number of feti as the greatest which can possibly exist in multiple pregnancy, I will state that I believe six (as in Dr. Osborne's case, and in the one above cited from Tanner) to be the largest that has been authentically reported with sufficient exactness to be entitled to credence.

THE OBSTETRIC POSITION FOR FORCEPS AT OR ABOVE THE
SUPERIOR STRAIT.

BY

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THE past few years have brought about a great change in the obstetric science, particularly as regards the use of the forceps. Comparatively but a few years ago it was highly censurable and almost criminal to use them except under certain circumstances in respective cases as laid down by the books, and then only upon due deliberation in consultation with the best obstetric counsel and assistance in the vicinity. Application of the forceps at or above the superior strait was regarded as an operation to be undertaken only by the most skilled and experienced practitioners, and by them only as the *dernier ressort*, the safety of the life of the mother demanding it. I say last resort, for craniotomy was considered less dangerous and oftener practised in preference by almost every obstetrician of any renown as an expert operator. With a sinking feeling of sadness about my heart every time I dwell upon the memories of the past, I must confess I have stood by the bedside and given my consent for the perforator, knife, and hook to do their work, conscientiously believing it an imperative duty to save the mother, where to-day, in some instances, I am confident that with the knowledge and perfection attained in the science *both* lives could have been saved. What a radical change there has been for the better—for humanity! To-day the forceps are used frequently by obstetricians throughout the whole world even in severe or protracted *natural* labor to save time, save pain, and *for safety*.

No man of ordinary ability and average proficiency in the use of the forceps would think of attending a case of confinement without having his case of instruments with him or near at hand, ready to be had in a moment's time if needed. If he should meet with a case attended with delay at any part of the pelvic canal, understanding his responsibility and know-

ing his duty, he would apply the forceps, if admissible, and deliver without waiting for the tediousness of counsel.

It is not my intention to present testimony in favor of the use of the obstetrical forceps, for that is universally admitted, but with these few general prefatory remarks I desire to call attention to a particular class of serious cases which all, or most all, practitioners have met with more or less often in practice. I refer to those cases where the head is lodged at or above the superior strait, the uterine efforts being powerless to effect dislodgment and force it on through the channel. It is my intention at this time to give in detail, but as briefly as possible, the manner in which I have managed them for the past four years, and my theory of the principal causes which occasion them. These cases demand the use of the forceps, and how to apply them and deliver successfully, in a majority of cases, I am confident I am able to explain.

Before proceeding to the demonstration of delivery, I will turn for a few moments to investigate briefly the principal abnormal conditions which cause detention at this point. Contraction of the antero-posterior diameter is a frequent cause; more or less disproportion between the head and pelvis is perhaps oftener met with in practice, but the natural uterine efforts most generally are able to overcome the difficulty, provided sufficient time be given; the long diameter of the head may present in the short diameter of the pelvis, or it may present in a number of positions which will cause detention. In my opinion, the most common cause of difficult and serious cases met with lies in the fact of the existence of an excessive inclination of the plane of the superior strait.

I am speaking from my own personal experience, and governed in my statements by deductions made from that experience alone; nor do I include those cases of objective deformity, only those whose forms appeared perfect and in whom any deviation from the normal inclination was unsuspected.

The subjects are as a rule short, square-built, well-developed women with broad hips, and investigation will reveal in almost every instance an excessive anterior or lumbar curvature of the spine coexisting. In the last class of cases it will be readily perceived what necessarily will be the effect upon the labor; the head will not engage in the pelvis, but be forced

down upon the posterior border of the ossa pubis, against which point the power of the uterine efforts will be uselessly spent, the axis of the body of the child being obtuse from that of the axis of the upper strait. Labor cannot progress favorably unless the relative positions are changed, to harmonize the axis of the child and the axis of the inlet of the pelvis. This can be accomplished in almost every case by pursuing the following course:—Place the patient upon her knees close to the edge of the bed with her face or head resting upon a pillow on a level with her knees, carry the body backward enough to flex the thighs upon it; this position will bend the spine forward upon the fundus of the uterus, crowd the breech and body of the child forward and downward, lessen the curvature of the spine, and thereby overcome the obliquity of the axis of the entrance of the superior strait, and throw the power of the uterine pains in the proper direction.

If there is no contraction of the pelvis, mal-presentation, nor disproportion existing, the probabilities are that delivery will be accomplished by the natural powers without any further assistance, if this position is maintained for a reasonable time.

Should there be any cause existing sufficient to resist the efforts of nature, I apply the long forceps without changing the position of the patient. In the ordinary obstetric positions upon the side or back the great difficulty experienced in delivering from the superior strait is in applying traction in the direction of the axis of that strait, and when there is an excessive inclination of the superior plane, the difficulty is increased twofold. In the knee-and-face position, the body of the child is thrown forward and placed in the most favorable position to enter the pelvis, and the forceps can easily be adjusted. It is necessary that the operator should be familiar with the anatomy of the pelvis, and thoroughly conversant with the mechanism of labor to successfully deliver from the superior strait. The forceps once applied to the head of the child, one hand firmly grasps the handles, the fingers of the other are placed across above the blades or rather handles, within the ostium vaginae as a guard to protect the perineum; or, what would be better, the Sims speculum is applied and held by the hands of an assistant. The handles are slowly elevated, the perineum pressed steadily upward by the fingers of one hand or the spec-

nium, until the forceps occupy the line of the axis of the upper strait. Then simultaneously with a pain traction is made, the power behind (*vis a tergo*) and the power in front (*vis a fronte*) working together.

Traction is made backwards and upwards as the head glides along the planes of the strait, then downwards and backwards until the head is brought to the perineum. As it passes through the pelvis, the handles of the forceps will convey to the hands the changes and rotations it makes to conform to the planes and diameters. It is my custom not to remove the forceps until after the head has been delivered, as I can better protect the perineum from injury by leaving them on.

As soon as the head is delivered, the forceps are removed, the child supported until the mother is placed upon her side, when the body of the child is delivered by the hands.

The following clinical report of a case delivered by me recently, which is copied from my obstetrical record, will plainly demonstrate the proceedings. I give only one case, that I may not be considered tedious.

"January 9th, 1878.—I was called in great haste to attend Mrs. L. K., a healthy young woman aged twenty-nine years. When I arrived, I found her in the charge of an old and experienced midwife. The membranes had been ruptured some six or seven hours; the pains were frequent and powerful. She had had a child twelve years before, which had been delivered by forceps with difficulty and injury to the perineum by a physician in Eastern Pennsylvania. Examination revealed the head presenting in the L. O. A. position, resting high upon the pubis in that position. Pains very strong, but no progress; I changed the position frequently from side to back, tried pressure and taxis, applied the forceps when lying upon the back, but failed to dislodge the head, the power being lost against the pubis. Suspected a deviation in the angle of the upper plane, placed her on her knees on the edge of the bed with her face down upon a pillow, one assistant held her head and hands, one on each side to support her hips and body, and a fourth to aid me. Applied the Elliot forceps in this position corresponding to the sides of the pelvis, female blade first. Raised the handles and made traction with each pain, protected the perineum by pressing up with fingers of left hand *à la* Sims speculum. Head soon engaged upper strait, rotated from left to right, passed upwards, backwards, then downwards and backwards. Delivered safely a good-sized living female child. Forceps on about twenty to thirty minutes. Both mother and child did well."

The above case is selected from quite a number which I have delivered in this manner from the superior strait, and exempli-

fies my manner of operating. Although I am not aware of any one else ever having practised this mode of delivery, it must present itself to the reason of considerate men as being in harmony with sound principle. A new obstetrical forceps has been recently invented by M. Tarnier, Surgeon-in-chief of the Maternity Hospital in Paris, expressly for delivering from at or above the superior strait. It is called the *forceps à aiguille*, or needle forceps, and the inventor claims that it can be applied in the ordinary obstetric positions, traction made in the direction of the axis of the superior strait, and the same results accomplished which I claim for the knee-face position with the Elliot or any good long forceps.

Through the kindness of Messrs. Geo. Tiemann & Co., instrument makers of New York, I have obtained the needle forceps for inspection and trial, and will reserve any opinion I may have of it until after trial, although I do not hesitate to say that, from careful inspection, I am confident it will prove a valuable instrument and priceless in the hands of expert obstetricians in delivering from the superior strait *in the knee-face position*. Time and experience alone will prove its worth or worthlessness.

The instrument is somewhat complex, and it will require some practice to use it with dexterity. The principles upon which it is constructed are simple and sound. The main peculiarities consist of a deep curve in the posterior border of the blades just behind the fenestra, with rods attached by hooks to the lower border of each fenestra. These rods can be detached at pleasure. They are curved in the middle to pass around the perineum, and unite back by the handles by a spring in a cross-bar some ten inches long, with which the traction is made.

In conclusion I will say that, in presenting this obstetrical position and manner of delivering from at or above the superior strait to the profession, I do so with the positive knowledge that it has been the means of saving life in my hands in several instances, and with the conscientious conviction that it is entitled to the consideration of the profession. I have seen expert obstetricians in days past baffled in these deliveries, and the perforator passed up and a life taken, in consequence of the decision of counsel, to save the mother—a course which I now firmly believe to have been unnecessary.

THE INDICATIONS FOR HYSTERO-TRACHELORRHAPHY,¹
OR THE
OPERATION FOR LACERATION OF THE CERVIX UTERI.

BY
PAUL F. MUNDÉ.

(With two Chromo-lithographic Plates.)

THE first to devise and carry out the proper operative procedure for the relief of the lesion now familiarly known as "laceration and eversion of the cervix uteri," was Dr. Thomas Addis Emmet. His claim to the priority of this operation is so well established as to be universally acknowledged. I had been under the impression that he was also the first to recognize the injury as a distinct lesion, and to appreciate its etiological importance as a prime factor in the production of uterine disease, as he certainly was the first to do away with at least four-fifths of that time-honored and favorite affection, "ulceration of the womb," by showing how the ulcerated surface can be rolled in and made to disappear by approximating the edges of the "ulcer" with tenacula.² But on looking over Gardner's work on Sterility,³ published in 1856, I find that this author repeatedly speaks of "laceration of the os and cervix" as productive of ulceration, hypertrophy of the cervix, endocervicitis, and sterility. He also gives two colored plates (I.

¹ This term was first employed (to my knowledge) by Dr. E. C. Dudley, now of Chicago, in a paper published in the N. Y. Med. Journal for January, 1878, and is derived from *τραχηλος*, neck, and *ρᾶφη*, a seam. I have adopted it, because I think so important an operation should have a distinctive name of its own, and for convenience' sake.

² See Remarks by Peaslee, after the reading of a supplementary paper on "The Proper Treatment of Lacerations of the Cervix Uteri," by Dr. Emmet, before the N. Y. County Med. Society, December 1876 (N. Y. Med. Jour., Jan., 1877). "When at Demilt Dispensary, a large number of cases of the class referred to by Dr. Emmet presented themselves, but were not recognized, for none of us knew anything about them till Dr. Emmet told us. It was he who, in a happy moment, brought the anterior and posterior surfaces together with two tenacula, and instantly demonstrated that what we all thought was an ulceration of the cervix was nothing more or less than a laceration."

³ The Causes and Curative Treatment of Sterility, etc., by A. K. Gardner, A.M., M.D., New York, 1856.

and V.) of the cervix seen through a four-bladed speculum, one of which is intended to represent "fissure of the os," a frequent cause of abortion; and the other two, the inflamed and ulcerated endocervical mucosa exposed by the expansion of the blades of the speculum. The first figure mentioned (Plate V., Fig. 1), clearly shows multiple superficial fissures of the os, with eversion and ulceration; Plate I. is a partial, and Plate V., Fig. 2, a complete laceration and eversion. Of an operative procedure for the cure of this affection not a word is said.

Professor Roser, of Marburg, Germany, also lays claim, I believe, to having recognized what he calls "cicatricial ectropium of the cervix" long before it was referred to by others, but although the exact reference to Roser's paper has escaped my memory, I am certain that he never recommended its cure by a plastic operation.

Emmet's first operation was performed Nov. 27th, 1862, in the presence of his assistant Dr. G. S. Winston, and of Dr. T. G. Thomas. Although during the next seven years he repeated the procedure many times, in the presence of numerous professional gentlemen from all parts of the Union, his first published account of the operation and its technique did not appear until February, 1869, in a paper on the Surgery of the Cervix, read before the Medical Society of the County of New York, February 8th, 1869, and printed in the AMER. JOUR. OF OBSTETRICS for the same month.

In this publication Dr. Emmet was preceded by a few months by Dr. M. A. Pallen, then of St. Louis, who independently, he informs me, described substantially the same operation for the same purpose.¹ In spite of these two papers and the constantly increasing number of operations performed by Dr. Emmet, amounting up to 1874 to nearly 200, it was not until the reading of a second and more lengthy paper by Dr.

¹ St. Louis Med. and Surg. Jour., May 10th, 1868.

The diagrams in this article represent a lesion slightly different from that now commonly considered as requiring operation; for while we at present generally look upon the eversion of the lacerated lips as the condition chiefly calling for operative interference, in this diagram merely a fissure, with no eversion whatever, only a slight gaping of the lower edges of the wound, is depicted. In fact, Dr. Pallen calls the lesion "uterine harelip." The operation itself and the after-treatment are described precisely as by Dr. Emmet, to whom Dr. Pallen (in a letter to me) unqualifiedly accords the priority in devising the operation and recognizing its indications.

Emmet before the same Society on Sept. 28th, 1874, and its publication in the *Jour. Obst.* for November following, that the profession became fully aroused to the immense value of the discovery of the lesion, its consequences, and its cure. From that time on, probably few of the rising gynecologists of our larger cities, particularly those coming from that fountain-head of uterine surgery, the New York Woman's Hospital, have neglected the opportunity to perform this operation; and papers descriptive of the lesion and its operative cure have been written by Wing,¹ Baker,² Breisky,³ Dudley,⁴ Emmet himself,⁵ and others, those by Wing and Dudley being illustrated by diagrammatic sketches, which were omitted in all the previous descriptions. A careful perusal of these papers shows me, and the diagrams referred to confirm this impression, that all the authors who have hitherto written on this subject, speak only of COMPLETE laceration or fissure of the cervix, either uni- or bilateral, with a rolling out of the lips of the cervix up to the vaginal reflection, the cervix presenting the appearance of an eroded surface two inches or more in diameter. These are the typical cases of the lesion, as to the deleterious effects of which, both locally and on the general system, their incurability by other means, and their rapid, sure, and safe cure by Emmet's operation, with the usual entire relief of all symptoms, no unprejudiced and experienced observer can at the present day entertain a particle of doubt. These very common injuries, and the technics of the operation by which they are cured have now become so familiar to the majority of the profession, by means of the papers above referred to, that it would be tedious and waste of time to describe them again. But, so uniform as is the acceptance by all the initiated of Emmet's operation for these the gravest forms of the lesion, so greatly divided does the profession still seem to stand as regards the exact point when a laceration and eversion of the cervix requires operation, and when it is still curable by topical applications—astringents, caustics, or canterry.

Not only is this uncertainty not confined to *medical* gynecologists proper, but even some of the leading uterine surgeons

¹ Boston Med. and Surg. Jour., March, 1876.

² Ibid., Sept. 27th, 1877.

³ Wiener Med. Wochenschrift, 1876.

⁴ N. Y. Med. Jour., January, 1878.

⁵ L. c.

have expressed the opinion that the minor degrees of laceration and eversion do not require operation, as they are too insignificant to be productive of evil, or can be cured by mild astringents.

Thus, at a meeting of the Boston Obstetrical Society, held Oct. 11th, 1876, Dr. James R. Chadwick takes occasion to protest against the impression unintentionally conveyed by Dr. Wing (l. c.) that these lesions are curable only by operation, "having found that, in the vast majority of cases, the tender mucous membrane of the cervix may be toughened by the application of mild astringents so as to bear exposure to friction with impunity." "The treatment," Dr. C. adds, "may, however, have to be continued for many months. In extreme cases an operation is certainly advisable."

More recently, Dr. Thomas, in a lecture delivered in his regular course at the College of Physicians and Surgeons, October 10th, 1877,¹ exhibited a patient with *slight* laceration of the cervix uteri ("the two lips of the wound were separated to a very small extent, but cicatrization had taken place, and they were everywhere covered with mucous membrane"), the remainder of the genitalia being apparently normal, for the avowed purpose of cautioning the class against attaching too much importance to such "trivial particulars" as this slight laceration of the cervix. He therefore referred her "pain in head, back, side and down the leg," and too frequent menstruation, all dating from last confinement, to some obscure intestinal trouble, and decidedly discountenanced the operation of her laceration, as entirely devoid of importance.

Still more recently, at the meeting of the State Medical Society in Albany, in January last, on occasion of the reading of a paper on this topic by Dr. Walter B. Chase, of Windham, N. Y., remarks favoring the medical treatment of some of these lesions were made by Drs. Fordyce Barker and A. Jacobi, which, coming from so high authority, have attracted considerable attention and are, in my opinion, calculated to depreciate both the significance of the lesion in question and the restorative operation.²

Dr. Barker, after admitting the existence of large laceration

¹ Bost. Med. and Surg. Journal, Nov. 8th, 1877.

² Med. Record, March 9th, 1878.

and eversion of the cervix uteri, and the efficacy of the plastic operation, both having been demonstrated to him by Dr. Emmet, asserts that some of these cases will get well without surgical treatment. He says that formerly, before Dr. Emmet's first publication on the subject, he succeeded by local treatment in removing the ulcerated appearance, diminishing the size of the uterus, and relieving the symptoms in the cases then "supposed to be granular inflammation, ulceration or abrasion of the cervix, with enlargement of the uterus; the patient, for a time at least, was cured. But, in a few weeks, some of these patients would return, and, upon examination, *they would be found to be just as bad as ever.*" In some cases, however, he did succeed in effecting a cure—a complete involution of the organ and restoration of the ulcerated tissue by placing the woman in a *recumbent posture for two or three weeks*¹ and making occasional applications of the actual cautery. Then he goes on to say that "the fact that some such cases as these can be cured without a surgical operation is important, because the operation always requires confinement of the patient, and some of them will not consent at all to it." He then describes his method of treatment briefly, as follows: Recumbent posture, hot vaginal injections, tr. chlor. of iron, ergot, and nux vomica. After three or four weeks the uterus is reduced in size, and the patient is then allowed to be up, wearing a cotton tampon dipped in a saturated solution of tannin in water, to be renewed daily. "After a time," this could be dispensed with, and the patient was cured.

Dr. Jacobi claimed that, if the puerperal uterus and vagina be kept clean by repeated warm-water injections until the lochial discharge ceases, in all probability every laceration, unless it enters the peritoneum, will heal. And if it does not heal, the operation will do no more than close the laceration and remove the ulcerated surface; the uterine catarrh and chronic enlargement usually accompanying the lesion will, he asserts, get well only under separate treatment. The treatment covering all these indications at once, in Dr. Jacobi's experience, is the actual cautery applied to the cervix and endometrium, which destroys the cicatricial surface, and enlivens the adjoining circulation.

¹ Italics are mine.

In Europe, with the exception of Germany, the existence of laceration or fissure of the cervix as a distinct lesion requiring recognition and treatment, appears scarcely to have dawned upon the profession. With, it would seem, almost wilful neglect, all mention of the affection is omitted in the two latest books on gynecology, Barnes¹ and Leblond;² and authors so well acquainted with American medical literature as Hegar and Kaltenbach³ and Schroeder,⁴ in Germany, do not refer either to the lesion or its treatment. Beigel, in his first work,⁵ omits all mention of it; but in his recent treatise on Sterility⁶ he describes and recommends the operation. A translation of Emmet's second (1874) paper, by Vogel, of Berlin, appeared early in 1878, and has now doubtless familiarized the profession in Germany with the subject. The only authors speaking of it are Breisky,⁷ who operated on five cases under the guidance of a former house-surgeon at the New York Woman's Hospital, and was enthusiastic for the operation, and Ruge and Veit,⁸ who, in an article on "The Pathology of the Cervix," give a chromo-lithograph of a lacerated cervix. Barnes, to be sure, gives one woodcut of "eversion or rolling out of the lining membrane of the cervical canal" (Fig. 117), and two of "eversion of the lips" of the cervix, one in the early, the other in the advanced stage of hypertrophic elongation of cervix uteri (Figs. 120 and 121), which eversion he explains as caused by "growth or extension of the cervix from within outwards," but which, to my mind, evidently represent the familiar laceration and eversion by traction of the hyperplastic lips. I think his diagrams plainly show this, as well as two previous ones (Figs. 101 and 103) of "epithelial abrasion" around the os, several weeks after delivery, which also plainly show the first degree of ectropium of a multi-fissured os. Of course, the epithelium is abraded, but it is the epithelium of the everted endocervical mucosa, just within the oral border, not of the

¹ Diseases of Women, June, 1878.

² *Traité élémentaire de Chirurgie Gynécologique*, Paris, 1878.

³ *Operative Gynäkologie*, 1874.

⁴ *Dis. of the Female Sexual Organs*, Ziemssen, 1875.

⁵ *Krankheiten des weibl. Geschlechtes*, Stuttgart, 1874.

⁶ *Pathologische Anatomie der weibl. Unfruchtbarkeit*. Braunschweig, June, 1878.

⁷ *Wiener Med. Wochenschr.*, 1876.

⁸ *Zeitschrift f. Geburtsh. u. Gynäkologie*, ii., 1878.

vaginal mucous covering of the cervix, just without the border. I have seen many such cases, the recognition of which, though easy with a Sims' speculum, is difficult or impossible through the cylindrical or bivalve specula ordinarily in use.

A letter published in the *Chicago Med. Journal and Examiner* for April, 1878, from a physician travelling abroad, would seem to indicate that the eminent gynecologist of Dublin, Lombe Atthill, for whose writings and practice I have the highest regard, either does not or will not recognize the importance of the lesion in question and its operative cure. A typical case of laceration being presented to the writer, Atthill, on being asked what he thought of Emmet's operation, is reported as saying that "just now following in the wake of Dr. Sims, we (American physicians) were a little crazy on the subject of uterine surgery, and when a case presented itself, we lost sight of every therapeutical appliance except the knife."

In vivid contrast are the views of the eminent Danish gynecologist Howitz, of Copenhagen, who recently¹ published his experience on seventy-six cases of "Emmet's rupture of the cervix uteri." He found ectropium and erosion of the everted cervical mucosa to be almost constant results of the lesion, and cystic degeneration of the lips frequently present. The necessity for operation he regards as unquestionable, the condition being remediable in no other way.

The impression obviously conveyed by the remarks of Drs. Barker, Jacobi, and Atthill is, that the operation for lacerated cervix has been and is far too frequently performed; that, in the vast majority of instances, the lesion is curable by local applications, rest, and general treatment; that the operation is to be restricted only to the gravest forms of the accident; and, finally, that the minor varieties are, as a rule, too trivial to be either productive of evil or in need of an operation.

Now, while I certainly admit that slight lacerations or nicks of the cervix, without ectropium and with normal mucous surfaces, yes, even deep fissures without eversion, or rolling out of the flaps (Fig. 3), further, deep lacerations with eversion, but with the whole everted cervical mucosa cicatrized and smooth (Fig. 11)—while I admit that all these in no wise call for operative interference or any interference whatever

¹ Gynäkologiske og Obstetriciske Meddelelser, vol. i., No. 3, 1878.

(except there be cervical neuralgia from inclusion of nerve-filaments in the cicatrix, a symptom pointed out by Emmet as an indication for the operation), my experience decidedly warrants me in claiming that there are numerous cases of the minor degrees of cervical laceration and eversion in which the plastic operation is the most safe, sure, and rapid therapeutic measure for the relief of the local disease with which the patient is afflicted. Such cases are :

1. Slight lacerations (as shown in Fig. 8), which ordinarily give no trouble whatever, but in which, under the influence of friction against the posterior vaginal wall (the uterus often being subinvolted and depressed), the trivial ectropium becomes a profusely secreting ulcer, gradually spreading into the cervical canal, and producing the familiar mucopurulent tenacious plug projecting from the fissured os.

Here, strong caustics, chiefly solid nitrate of silver, nitric and chromic acids, or perhaps, in *due time*, milder astringents, such as tannin and iodoform, etc., may finally glaze over the ulcerated surface and cure the endocervicitis; but, as Dr. Barker himself admits, the cure would be merely temporary, lasting only a few weeks, "the ulceration" would then be found "as bad as ever," and in any case, as Dr. Chadwick says, the treatment may last for many months.

In these cases, the excision or curetting of the diseased endocervical mucosa (if much hypertrophied) may be necessary, before closing the laceration; but, as a rule, I have found the removal of the ulcerated surface from irritation by means of the operation to be sufficient, and but little, if any, after-treatment required to cure the former endocervicitis.

2. Slight lacerations, perhaps not ulcerated and non-productive in themselves of local disturbance, but still acting through the gaping and everted os, as chronic feeders of the subinvolution and hyperplasia, against which we all acknowledge our boasted therapeutics, local and constitutional, to be ordinarily of little avail. Here, where a stimulus to circulation and absorptive nutrition is needed, is not the irritation of the operation, the loss of blood attending it, and the persistence of the sutures for one to two weeks, a far better, and surely no more cruel agent than the actual canter, which, besides, puts a cicatrix where the operation places normal mucous membrane?

The operation in this class of cases (and they constitute the majority of those met with by the gynecologist), affords a mild and equally efficient substitute for amputation of the cervix, recommended as a stimulus to involution in "chronic metritis" or "areolar hyperplasia" by numerous writers (Mayer, Simon, Sims, Spiegelberg, Hegar, Carl Braun, and others). That it is not necessary to remove the whole or a large portion of the cervix in order to insure this involution appears from the statement made by Thomas¹ in referring to this operation of amputation in areolar hyperplasia. He says that "when a superficial layer of an organ which is affected by hypertrophy is cut off, a marked tendency to diminution in the bulk of the remaining tissue shows itself. . . . No great amount of tissue need be removed."

With precisely this object in view, August Martin, of Berlin, recently reported² having amputated the cervix uteri seventy-two times, with the invarying result of seeing the hyperplastic uterus decrease in length by 2 to 3 cm. beyond the dimensions of the part removed (2 to 4 cm.). The operation, as performed by him, he states to be quite a small matter, occupying often not more than ten to twelve minutes. As one of the advantages of the operation is stated the removal of the usually diseased cervical mucous membrane—an advantage equally well attained by trachelorrhaphy. Of Martin's cases, only seven experienced inflammatory after-effects. In the discussion which followed, Kehrer, Schroeder, and Olshausen agreed substantially with Martin, that removal of a portion of the cervix is greatly preferable to cauterization in stimulating the uterus to involution, and described their own operations for the attainment of the same object. To the objection of Kugelman, of Hanover, that these cases are curable "in time and with patience" by less severe measures, Schroeder replied that the time and patience of the patient should also be considered, and that it "certainly was preferable to obtain a certain result in a fortnight by a safe method, than an uncertain result after months of other treatment."

It will be seen that these opinions coincide precisely with those expressed in this paper, which, I may add, was substantially

¹ Dis. of Women, 1874, p. 307.

² Trans. German Gynecological Society, Sept. 12th and 13th, 1878. See this number.

written and read to some friends in June, 1878, three months before the meeting just quoted from. In order to be sure of sufficiently stimulating the uterus to involution, I should say that the flaps removed in hyperplasia should be larger and the incisions deeper, extending into the tissue of the uterus itself, than in the ordinary cases where there is but slight enlargement of the cervix or whole uterus. The usual large size of the cervix in hyperplasia *eo ipso* calls for larger denudation, and perhaps excision of a portion of one or the other lip. The subsequent approximation of the lips and mucous covering is also practised by Martin, who always draws the mucous membrane over the stump by sutures.

3. Cases of hyperplastic or cystic ectropium of one lip (Fig. 5), in which a raw, ulcerated surface, often one-half to one inch in diameter, takes the place of the lip. To excise this redundant and useless piece of tissue, slightly pare the edges of the broad cervix, and restore the normal transverse os, is certainly a much neater way of curing this difficulty than by the tedious canterly or often repeated scarification. Such cases, and those shown in Fig. 4, where the hyperplasia extends to both lips, generally complicated with fissure, form a large contingent for and are particularly benefited by the operation.

4. Cases of laceration of the endocervical mucous membrane, with comparatively slight injury to the border of the os, which, however, is patulous and funnel-shaped, often admitting the point of the index finger (Fig. 6), and frequently everted and eroded (Barnes, Fig. 117). The gaping os is usually filled with a muco-purulent, tenacious plug, the result of endocervicitis from exposure, and the patient complains of the symptoms peculiar to this condition. Here also the strong caustics fail, or are tedious. What is better, then, than to slit the cervix bilaterally, denude, and stitch it up like an ordinary laceration? I performed this operation in precisely such a case as the figure shows, during the past winter, in which nitric acid had been previously tried in vain for several weeks. I neglected, however, to slit the cervix on either side, and, therefore, failed partly in securing perfect union; sufficient contraction was, however, obtained to permit of subsequent rapid cure by nitric acid.

For this species of lesion, my friend Dr. M. D. Mann proposes passing a long, slender, curved bistoury (tenotomy knife) into the normal margin of the cervix, carrying it down as far as the gaping extends, and then sliding it around to the point on the opposite side, and cutting out into the canal; this procedure is to be repeated on the opposite side. Two crescentic shavings of tissue are thus removed, and the opposite edges united by sutures.

5. We are all familiar with the difficulty experienced in curing large granular and follicular erosions of the cervix by caustics. Why not, then, hasten the cure by removing the diseased mucous membrane and uniting the healthy edges by sutures, as is done in Emmet's operation? I am confident much time could thus be saved.

If such slight cases of cystic or follicular erosion as seen in Fig. 2 would not necessarily require trachelorrhaphy, that depicted in Fig. 12, and taken from a case seen in my service at Mt. Sinai Hospital, certainly would. It was my intention in this case to excise completely the large cystic degeneration (which with its fissures closely resembled epithelioma, the differential diagnosis being made by the microscope as hyperplasia cystica), and then to create two lateral fresh surfaces and unite them in the ordinary manner, but the patient unfortunately declined the operation, and I lost sight of her.

If there ever was a case ripe for malignant degeneration this was the one. Who will deny that the plastic operation proposed by me was an infinitely more rational and radically restorative procedure than the puncture of the enlarged follicles and cantery usually recommended?

Another reason why even otherwise trifling ectropia should not be allowed to go on for years unheeded and untreated was recently¹ advanced by Prof. Breisky, of Prague, who has observed and operated upon four cases of laceration in which one everted lip had become carcinomatous in consequence of the irritation to which the exposed cervical mucosa was subjected. These observations are confirmed by Veit,² who out of 9 cases of carcinoma cervicis found 3 in which the disease originated in the enlarged glandular elements.

¹ Wiener Med.-chir. Rundschau, Aug., 1877.

² Gynecol. Sec. German Congress of Phys., 1877.

I do not deny the statement that the majority of *fresh* cervical lacerations will get well merely with cleanliness and the recumbent posture, nor that many cases can be cured by the treatment advocated by Drs. Barker and Jacobi; but I would ask, What is the advantage of subjecting patients to a treatment extending over weeks and months, and confinement to a recumbent posture for two or three weeks, enlivening the monotony of this course by the occasional application of the actual cautery, when all this can be obtained (the wound closed, the cervix restored to its normal shape, and the uterus certainly diminished *somewhat* in size) after less than two weeks' confinement in bed by an almost entirely safe, simple, and comparatively painless operation? Should the uterus be depressed in the pelvis or its involution retarded, daily tannin tampons and hot injections for some time will certainly aid the complete cure, but by these the patient is in no wise incommoded, as she can apply them herself. That the operation is comparatively painless I have witnessed myself, since I have three times performed it without anesthesia, the patients telling me afterwards that they much preferred the only severe pain felt, that of the introduction of the sutures, to the nausea following etherization.

That the operation is comparatively devoid of danger is shown by the statistics of the New York Woman's Hospital:¹ In 84 operations, but one death occurred (from peritonitis); and Dr. Emmet² states that, in nearly 200 operations of the kind performed by him, only one case of cellulitis occurred, due, he believes, to inflammatory tendency in the hospital; and even in this case the operation was successful. So we have (considering that Dr. Emmet performed two-thirds of these operations in the Woman's Hospital down to 1875) at least 250 operations for trachelorrhaphy, with a mortality of two-fifths of one per cent, and a similar ratio of inflammatory trouble following it. Surely, but few operations involving equal skill and followed by equally beneficial results can boast of such security!

It is true that the operation occasionally fails (in 10 cases out of the 84 above quoted), but this is chiefly due to lack of proper preparatory treatment, to insufficient paring and careless adaptation of the wounded surfaces, and to influences not under

¹ Annual Report for 1877.

² L. C., AMER. JOUR. OBST., vol. vii., p. 449.

the control of the surgeon. A second operation usually cures the case.

At a meeting of the New York Obstetrical Society, held November 20th, 1877, Dr. Alex. J. C. Skene, the President, expressed the opinion that there were many abnormal conditions of the cervix uteri, other than lacerations, which could be cured better by the plastic operation than by any other means. While he did not explain himself more precisely, I drew the inference that he alluded to conditions very similar to those which I have been here describing and which I have looked upon as, under proper conditions, calling for the operation.

During the past year I twice performed the operation for lacerations smaller than that shown in Fig. 9, in both of which cases the indication was not the *extent* of the injury, but the irritation exerted on the hyperplastic uterus by the friction of the everted surfaces, and the beneficial influence to be expected for the reduction of the enlargement. These indications were confirmed by Dr. Thomas, who saw the ladies with me in consultation.

In the first case, the patient had suffered from hyperplasia and endocervical leucorrhea since the birth of her first and only child 20 years previously. The uterus was anteflexed, much enlarged, the probe entered to the depth of 3 inches, and a profuse, glairy, muco-purulent plug constantly protruded from the gaping os, the laceration and eversion of which held about the medium between the appearances depicted in Figs. 8. and 9. The left ovary was enlarged and tender, the uterus low in the pelvis. The patient had worn various pessaries, of which only the last, Hitchcock's, gave her some relief, without, however, removing the constant dragging and aching pelvic pains, for which principally she sought advice. Two months of local treatment bringing but temporary relief, the operation of paring and uniting the edges of the greatly enlarged cervix was performed April 18th, 1877, for the indications above stated. Complete union took place, leaving an almost virginal os. Within one month after the operation the uterus was reduced to $2\frac{1}{2}$ inches in length, the pelvic and ovarian pains disappeared, the patient, wearing a block-tin anteversion pessary covered with soft rubber, was able to spend the whole summer in the Adirondacks walking and riding, restored to complete health.

The second case was a still more striking illustration of the benefit to be derived from the operation, other than the mere closure of a small laceration.

The lady, æt. 32, mother of one child $4\frac{1}{2}$ years old, had had several miscarriages and had suffered for over 3 years from almost regu-

lar discharges of shreds, occasionally complete membranes, during menstruation. The pain and prostration attending these exfoliations were excessive. Uterus retroverted in the second degree, very much enlarged, cavity 3 inches long; os slightly lacerated and everted, scarcely as much as shown in Fig. 9; constant glairy, discolored cervical discharge. After 4 months' steady treatment by means of intrauterine application of nitric acid (once only), tr. iodine and iodized phenol (once weekly, preceded by sponge-tents for 2 months), and local galvanization of endometrium (3 months), the patient was very much improved and the membranes had not appeared for 2 periods. But still the endocervical catarrh continued and bade fair to keep up sufficient irritation to prevent the permanent cure of the membranous dysmenorrhea, the tendency to which was undoubtedly also aggravated by the chronic engorgement of the uterus. To relieve these two conditions and reduce the size and congestion of the uterus, with Dr. Thomas' approval, the operation of trachelorrhaphy was performed May 12th, 1877. Complete union was obtained. The further treatment consisted in intrauterine and chiefly vaginal galvanization, the latter applied for the most part by the patient herself, a very intelligent lady, her home being out of the city. In consequence of this treatment and the operation, the endocervical catarrh vanished entirely and the uterus was much reduced in size, being found to be normal before the lady left for a trip to Western New York in the following August. On this trip (wearing a retroversion pessary specially constructed for her) she was able to undergo fatigue and exertions to which she had been unequal since her illness. In spite of the unfavorable prognosis, her membranous dysmenorrhea seems cured, for it is now more than a year and a half since she passed the last shreds.

In this case, I will not attribute more to the operation than is its due, but I am confident that no local treatment directed solely against the desquamative action of the uterine mucosa would have been productive of permanent benefit, had the focus of irritation—the gaping, although but slightly lacerated cervix—been allowed to remain unrestored.

I trust that I have made sufficiently clear and explicit the object of this paper, viz.: to demonstrate, not that *every* laceration of the cervix should be operated upon as a duty, for I believe that a certain proportion of these lesions either do not require any treatment because they produce no symptoms, or, in a lesser proportion, are amenable to caustic and astringent applications—but that there is a very large class of cases in which the operation is called for, not by the extent of the injury, but by the symptoms which it produces and the pathological conditions which it aggravates or maintains. These cases I have stated above.

My position is very materially strengthened by a short paper recently published by Dr. Skene in the June, 1878, number of the Proceedings of the Medical Society of the County of Kings, on the "Treatment of Lacerations of the Cervix Uteri," in which he strongly recommends the operation, and describes his substitution of silk in place of the ordinary wire sutures. These he used in eight cases with perfect success. In one case, the operation was performed at his office without ether (as indeed were the others), the vagina tamponed, and the patient sent to her home by the street cars; and still union took place. In another case, the patient began to menstruate on the third day after the operation, left her bed, went to the adjoining room and voided a large clot from her vagina; and here also union occurred. Dr. Skene does not confine the bowels or particularly restrict the diet. Now, in view of these successes, I doubt not that we shall soon be able to operate on these slighter cases of laceration and eversion at our office or the Dispensary, send them home by the cars and let them go about their ordinary avocations (avoiding unusual exposure, of course), to return for the removal of the stitches at the end of a week. The absence of etherization, and the use of silk instead of wire, materially simplify and shorten the operation. When it has once been demonstrated that this plan is followed by success as regards union, then the great objection to the operation among the poorer classes, the confinement to bed, will be removed, and old cases of cervical ectropium should disappear from our clinics. Still, I consider the recumbent position during convalescence as a most important factor for the ultimate results of the operation and one always to be insisted upon when feasible.

It need scarcely be stated that the usual subjective indications for the operation first specified by Dr. Emmet (dragging and weight in pelvis, loss of sexual appetite, cervical and ovarian neuralgia, hysteria, general anemia, etc.) apply to the slighter lacerations exactly in proportion to the extent of the injury.

In conclusion, permit me briefly to refer to the experience on which these remarks and conclusions are based.

Out of 700 parous women (meaning such as had been delivered of one or more children at or near term) treated by me at the Out-Door Department of Mt. Sinai Hospital during the past two years, there were 119 with lacerations of the cervix

uteri of one or the other of the three degrees assumed by me. Of these, 92 were bilateral, 24 unilateral (17 right, 7 left; this latter result is contrary to the experience of others, who found the sinistral lacerations the more frequent, in accordance with the greater frequency of the left occipital presentations, and is probably accidental), two through the posterior and one through the anterior lip. Of these 119 cases, 20 were of the first, 45 of the second, and 54 of the third, or most severe degree. In only 16 cases was there no eversion and an absence of local and general symptoms attributable to the lacerations. In 3 cases the everted surface was cicatrized and innocuous. To show the rarity of simple uncomplicated erosion of the cervix, in comparison to the erosion and ulceration¹ of the everted cervical mucosa, I will merely mention that only 11 instances of this formerly so commonly diagnosed affection were observed among these 700 cases.

Of all the lacerations of the cervix which have been under my observation, the number of which is probably double that mentioned here (I have not thought it necessary to this paper to look over the records of former years and of private practice, deeming the figures here presented sufficiently large), 16 were operated upon by me, with 12 perfect successes and 4 failures as to union; in two of these latter, the operation was repeated, and complete union and restoration to health obtained. Two of these patients conceived soon after the operation and, as I am informed by the attending physicians, were confined at term without any difficulty being noticeable in the dilatation of the cervix and without a recurrence of the laceration.

The percentage of lacerations observed by me (17 per cent) is decidedly higher than that reported by Dr. Hanks ($8\frac{4}{10}$ per cent) from a similar public institution, the Demilt Dispensary, and serves to illustrate very aptly a remark made by Dr. Barker on the occasion above mentioned, that this lesion

¹ The term "ulceration" of the everted cervical mucosa is not intended to imply a loss of substance. With the exception of the chancre, carcinoma, and the excavated ulcer produced by direct friction on a prolapsed cervix, there is, "correctly speaking, no such disease as ulceration of the cervix uteri" (Craig, *Am. Practitioner*, July, 1878). The familiar ulcer of the cervix and the raw, bleeding, profusely secreting surface of the everted mucous membrane of the cervix, presents a red, granular, frequently elevated and fissured appearance, similar to the granular degeneration of the conjunctiva.

occurs with vastly greater frequency in persons who have had neither skilled obstetrical attendants nor the care and rest required after confinement, since in his own practice, confined to the more wealthy classes, he had met with this accident in but two well-marked cases. Now, the patients of the Demilt Dispensary are mostly of Irish and American nationality, among whom it is customary to employ a physician at their confinements, and observe the usual week or nine days of the recumbent posture afterwards, whenever their circumstances permit; but among the Jewesses, who constitute by far the majority of patients of the Mt. Sinai Hospital Outdoor Department, I hear that it is the rare exception for them to be delivered by a physician, and that the lying-in period is but poorly observed.

That this higher percentage (three times as high, indeed, as that stated by me in remarks made after the reading of Dr. Emmet's last paper, two years ago, when I was less familiar with and had seen a much smaller number of cases of the lesion) is not accidental or confined to patients of the class named, is confirmed by the experience of Dr. Wm. Goodell, who, in "The Address on Obstetrics" read before the State Medical Society of Pennsylvania in May, 1878, and received by me in reprint only a few days ago, says: "My own experience at the Dispensary for Diseases of Women at the University of Pennsylvania would lead me to infer that about one out of every six women suffering from uterine trouble has an ununited laceration of the cervix."¹ He also states that he has operated for this lesion eighteen times during the past twelve months. This paper of Dr. Goodell's contains, by the way, the most forcible and graphic picture I have yet seen of the peculiar appearance and the consequences of this lesion, drawn with all the eloquence for which the author is so justly celebrated.

Finding that correct and intelligent representations of the lesion now known as Laceration, Fissure, or Ectropium of the Cervix Uteri are exceedingly rare, there being only one such diagram in colors, to my knowledge, in existence, made with the purpose of demonstrating its appearance—that of Ruge and Veit, above referred to—I had a series of colored plates of the

¹ Laceration of the Cervix Uteri. The Address in Obstetrics delivered before the Medical Society of the State of Pennsylvania, by Wm. Goodell, A.M., M.D., etc., May, 1878. Phila.; Collins, Printer, 705 Jayne St.

various forms and degrees of laceration and ectropium of the cervix uteri prepared from nature, for the faithful execution of which I am indebted to the kindness and skill of Dr. A. H. Fridenberg, house physician at Mt. Sinai Hospital, whose residence in the hospital enabled me to secure his immediate attendance whenever a case favorable for illustration presented itself. The cases of laceration were chosen to show, as nearly as practicable, without exaggeration, the typical varieties of the lesion designed to be discussed in this paper; and one diagram of simple erosion of the cervix was added to illustrate the difference in appearance between the two affections. I think they clearly and truthfully represent what they claim to do, and trust they may prove of practical value to the uninitiated.

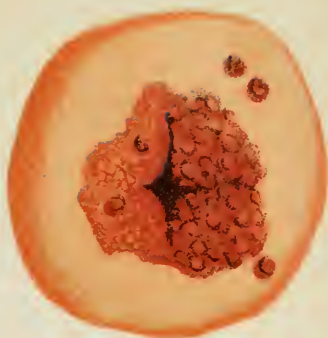
EXPLANATION OF PLATES.

(All figures taken in the left semi-prone position through Sims' speculum.)

- FIG. 1. Large catarrhal erosion of nulliparous cervix.
 - FIG. 2. Follicular erosion of parous cervix with slight fissure.
 - FIG. 3. Large stellate laceration without eversion.
 - FIG. 4. Stellate laceration with eversion and cystic hyperplasia.
 - FIG. 5. Cystic hyperplasia and eversion of anterior lip.
 - FIG. 6. Patulous os, without distinct external fissure.
 - FIG. 7. Unilateral laceration (right) with eversion.
 - FIG. 8. Bilateral laceration with eversion, first degree.
 - FIG. 9. Bilateral laceration with eversion, second degree.
 - FIG. 10. Bilateral laceration with eversion, third degree, showing tenacula inserted to approximate the everted lips.
 - FIG. 11. Bilateral laceration with eversion, third degree, mostly cicatrized and not ulcerated. Both upper corners show fresh breaking down of cicatrix.
 - FIG. 12. Enormous cystic hyperplasia of anterior lip, simulating epithelioma.
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1.



2.



3.



4.



5.



6.

Mundé on Lacerations of the Cervix Uteri.



7.



8.



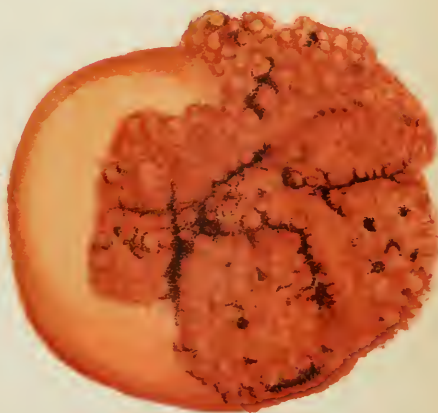
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10.



11.



12.

THE FORCEPS IN DIFFICULT BREECH DELIVERIES.¹

BY

ABIJAH J. MILES, M.D.,

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CASE I.—On September 17th, 1876, I was called by Dr. D—— to see Mrs. Dinah Johnson, who was in labor with the fourth child. The patient, aged 25 years, colored, was small and compactly built; she stated that in the two previous confinements she had been delivered by instruments, but for what cause she did not know.

Doctor D—— first saw the patient at 7 o'clock A.M., Sept. 17th. He learned from her that she had been in labor during the greater portion of the night, and that at this time she had very active bearing-down pains recurring every five or ten minutes.

On digital examination he found the os above the superior strait, dilated sufficiently to admit two fingers, soft and dilatable; but he could not make out the presenting part. During the next six hours labor continued without making much progress until 1 o'clock P.M., when the membranes ruptured and the breech descended past the superior strait.

For the succeeding four hours, the pains, although not so frequent, seemed to be bearing down and powerful, without making any progress in the case. The doctor made an effort to hook the finger in the groin of the child to terminate the delivery, but failed. The pains seemed to be less efficient and not so frequent. The doctor, seeing that Nature was insufficient to effect delivery, and that he could not overcome the difficulty with the unaided hand, sent for me. I arrived at 7 o'clock P.M., and found the breech presenting in the left sacro-posterior position, and so high up and firmly impacted I could not bring it down with the fingers; I therefore applied my breech forceps, and after a very few moments' traction brought down the breech to the vulva, when I removed the forceps and soon terminated the delivery; the result being a healthy male child. After allowing the patient to rest for a moment, I then proceeded to remove the after-birth, but soon discovered that there was more than the after-birth in the uterus, another child presenting in the left occipito-anterior position at the superior strait. Bearing-down pain soon occurred with sufficient force to propel the child into the pelvis. Then pains ceased for about thirty minutes, and notwithstanding all our efforts to bring about uterine contraction, none occurred. The patient became chilly, the pulse grew weak and frequent, she complained of dizziness of the head and had nervous tremors. Seeing that she was threatened with puerperal convulsions, I immediately applied the head forceps and soon delivered her of a second living child. The placenta, a double one, was soon delivered. The patient felt faint, had frequent rigors and cold extremities, and

¹ Read before the Obstetrical Society of Cincinnati, Sept. 12th, 1878.

more hemorrhage than normal in consequence of the slow contraction of the uterus. Ergot and stimulants were given, external compression of the uterus resorted to, and warmth applied to the surface. After one hour, reaction took place, the uterus contracted, and the woman made a good recovery. The effects of the use of the instruments on the children were as follows: On the first, or breech case, there was the imprint of the forceps on the breech immediately after delivery which soon faded; besides this, there was a blue line on the left thigh, caused by the pressure of the outer edge of one blade which disappeared by the end of the second day. On the second child (the head case) the result of the use of the instruments was much more marked. From the pressure of the ends of the forceps there was some abrasion posterior to the left ear, and behind the right ear there was not only abrasion, but the cuticle was removed and the parts much contused, the results of which did not disappear for a week.

CASE II.—August 25th, 1878, I was summoned to see Mrs. R., 23 years of age, married, of French nativity, slender build, medium height. In April, 1877, had aborted at three months; this being her first gestation. She is now in labor at full term. According to the account of the patient and that of the midwife, the labor had commenced with the rupture of the membranes, August 24th, at 3 o'clock A.M., twenty-five hours before I saw the case. During the day following the rupture of the membranes, she had labor pains recurring at irregular intervals, accompanied with discharge of the liquor amnii, but the pains at no time severe or long continued until 6 o'clock P.M. of same day. After this time, uterine contraction occurred with considerable power, and more frequent. The midwife in attendance said she had diagnosed a breech presentation, but thought, from the extent of dilatation of the os, the character and frequency of the pains, she would certainly soon be through, notwithstanding the breech was above the superior strait. At midnight, six hours after, violent and frequent bearing-down pain was present, the breech descended past the superior strait, but not low enough for her to make traction with the finger on the child. For the next hour there was very little pain and no progress in the case. The midwife then gave her teaspoonful doses of fl. ext. of ergot every fifteen or twenty minutes, until she had administered half an ounce of the medicine without producing any progress in the labor. I was then sent for and arrived soon after 4 o'clock A.M., August 25th. I found the patient considerably exhausted from the protracted labor, pulse frequent, anxious worried expression bordering on despondency, with recurrent pain every five minutes devoid of expulsive power, the neck of uterus well dilated. The breech presenting in the first or left sacro-anterior position, and so high up and firmly impacted in the pelvis that I could not get my finger sufficiently in the groin of the child to make traction. There was inertia of the uterus with exhaustion and threatened puerperal convulsions. I therefore concluded to deliver at once, which I did by the application of my breech forceps. After the forceps were

adjusted I made traction, gradually bringing down the breech to the vulva, when the forceps were removed, and the fingers inserted in the groins of the child and the delivery of the breech soon completed. The remainder of the delivery was effected on the same principles that guide us when the pelvic or podalic extremity has presented. In this case there was some little delay in the delivery of the head and from the consequent pressure on the cord, or from the amount of ergot the woman had taken, or both, the child was born asphyxiated. But after thirty minutes of persistent work at artificial respiration, the child was restored, since which time it has been doing well. The impress of the forceps on the pelvis of the child was well marked soon after birth, and on the left thigh there was a distinct blue line, bordered with red, caused by the pressure of the outer edge of one blade of the forceps. This, however, entirely disappeared by the end of the second day.

You will perceive that I have proceeded differently in these cases from the course pursued by most obstetric writers. But before discussing the question further, we will quote from a number of standard authors on the subject.

Hugh L. Hodge, in his great work on Obstetrics, after describing the indications for, and the application of the fillet in breech cases, says: "Necessarily, however, under the influence of traction, the bandage is reduced to the state of a cord, with numerous folds and irregularities, running across the groin; hence, the delicate tissues are bruised, and even lacerated, so that inflammation, ulceration, or sloughing, endangering the life of the child, may ensue." "The *introduction* of the fillet over the groin is not always an easy operation." "It is well to observe that the use of the fillet should be suspended as soon as the practitioner can render effective assistance by means of his finger or hand, as there must be always more or less danger of injuring the tissues of the thigh by this apparently simple agent." The same author says of the blunt hook in breech presentations: "The danger of the blunt hook, therefore, is the necessary contusion from a hard steel instrument acting on the delicate tissues of the thigh: this is, of course, aggravated by any increase or continuance of the force employed and especially by any mal-location of the point of the hook. Although this danger seldom involves the life of the child, yet the operation is not unfrequently followed by abrasion of the skin, ecchymosis, laceration, and subsequently by inflammation and suppuration; occasionally, also, ulceration, and even sphacelus have taken place, which, upon ordinary occasions, may not be

productive of any serious mischief, but may become fatal in consequence of inflammation and sloughing extending to the large blood-vessels, nerves, and other important tissues of the groin."

Dr. Gunning S. Bedford, in his work on Obstetrics, speaks of the uses of the fillet and blunt hook in breech cases, but says they can be resorted to without injury to the mother or child.

Prof. Leishman, of Glasgow, says: "The blunt hook has been recommended in cases of obstructed breech deliveries, but the danger of wounding the soft parts of the child which it entails is now very properly held to be such a serious objection to its use that it has been entirely discarded where there remains a possibility of the child being alive. The fillet may, however, be substituted, and employed with safety and efficiency."

Dr. Karl Schroeder, in his *Manual of Midwifery*, says: "If the breech is so low down that an index finger can be placed in each hip, the extraction does not offer any great difficulties. In other cases, the impaction of the breech resists all efforts; during a pain it may be brought a little lower, but in the interval it stands as firm as a rock. We may then try to replace the index finger by a blunt hook. This, of course, gives the operator much greater power, but its application is not quite free from danger. When the extraction is urgently indicated, the child must undergo that danger."

"The use of the blunt hook is certainly not free from danger to the child, and Hecker's recommendation to extract by means of the sling deserves consideration. He states that the sling can be applied without much difficulty, and that the traction is effectual. It is at any rate less dangerous than the blunt hook."

Prof. W. S. Playfair, in his work on Midwifery, speaking of impacted breech presentation, says: "That our only resource is traction on the groin; and this is always difficult and often unsatisfactory. Of all contrivances for this purpose, none is better than the hand of the accoucheur. Failing in this, or when it proves insufficient, an attempt should be made to pass a fillet over the groins. The use of a soft fillet is in every way preferable to the blunt hook. A hard instrument of this kind is quite as difficult to apply, and any strong traction employed by it is almost certain to seriously injure the delicate fetal structures over which it is placed."

Dr. R. Barnes in his work on Obstetric Operations, under the head of difficult breech presentations, says: "I have seen trinit-

less and injurious attempts made to extract by fingers, hooks, and forceps. I believe that all the best authors—that is, of those who have encountered and have had to overcome this difficulty, for it is little considered in our text-books—condemn the use of hooks and forceps. Now, hooks and forceps will in all likelihood either destroy the child or involve its death through the delay arising out of their inefficiency, or they may seriously injure the child. The blunt hook may fracture the femur, contuse the femoral vessels, or at least inflict severe bruises on soft parts. The forceps may injuriously press on the abdominal viscera.” He further says: “Or you may pass a piece of tape or other soft cord over the groins, as Giffard did in a case quoted by Perfect. Dr. Ramsbotham recommends the slipping of a silk handkerchief over the groins. But it is possible that these and like measures may fail, and that you have nothing left but to break up the wedge by separating its component parts and this, I repeat, is the proper thing to do in the first instance. I have always succeeded in delivering these cases by the simple use of the unaided hand. This is done by bringing down one foot and leg. It is better to leave the other leg on the abdomen as long as possible, as it preserves the greater rotundity of the breech, and helps to protect the cord from pressure.”

Prof. Geo. T. Elliot, in his *Obstetric Clinic*, says of the blunt hook: “This is often very useful in tractions upon the groin, the axilla, or the lower jaw of a dead child. For living children it would be well to have curves of different sizes, so that they might be adapted to the groins and thighs in difficult pelvic presentations. The fillet is preferable in pelvic presentations of living children.”

In his *Principles of Midwifery*, sixth edition, published 1824, John Burns thus writes on the subject of breech presentations: “Should the difficulty of delivery, or the length of time to which the labor is protracted, require it, some insinuate a blunt hook or a soft ribband over one of the groins, and thus extract the breech.”

In the work of P. Cazeaux on *Midwifery*, in speaking of difficult breech deliveries, says: “Lastly, if the breech is so far engaged as to be no longer capable of being pressed above the superior strait, and nevertheless has not yet descended low enough to be caught by the fingers, a blunt hook is employed which is to be applied from without inwards on the anterior

groin, if it is possible to make it slip up between the anterior hip and the symphysis pubis; in the contrary case, it is passed between the two thighs, and made to penetrate from within outwards on the internal part of the limb, but in this latter case it is necessary to protect the genital parts, the serotum in particular, by one or more fingers previously introduced, lest they become embraced by the concavity of the instrument."

Cazeaux does not mention the fillet.

Wm. P. Dewees, in his *System of Midwifery*, after describing the method of delivery of delayed breech cases by the fingers, says: "Should the force just directed be too feeble for the purpose, or too fatiguing to the operator, he may substitute the fillet with very great advantage. Bandelocque makes a disparaging mention of this power; he says its application is so difficult that it is with a sort of repugnance that he reckons it among the resources of art."

"That it is sometimes difficult in its application I readily admit; but it is by no means impracticable, when the breech occupies the lower strait. But should we not be able to pass the fillet, because the breech is too remote from the finger, or because the breech is too large and firmly impacted in the pelvis, we must then attempt assistance by employing the blunt hook or hooks."

Fleetwood Churchill, in treating this subject, says: "The blunt hook is frequently used for this purpose, but it has serious disadvantages, and if it is used incautiously, the thigh of the child may be fractured." He does not mention the fillet.

On the Process of Parturition, Francis H. Ramsbotham, under the head of Difficult Breech Presentations, says: "But should the breech be so high that we are unable to insinuate one finger round the thigh, so as to give us the requisite command, we may by another very simple means produce a most valuable and useful purchase; the extremity of a silk or cambric handkerchief may be worked over the groin, without any great difficulty, by drawing down the end, of which a loop is formed round the fetal limb, and a most powerful hold is obtained. If the handkerchief be used carefully and tenderly, it is preferable to the blunt hook; but should the application of the handkerchief be difficult or impracticable, we possess an instrument, more efficient, perhaps, but more dangerous, in the blunt hook, to be employed only as a last resource."

From Smellie's Treatise of Midwifery, by Alfred H. McClintock, under the head of Difficult Breech Cases, we quote as follows: "If the waters are evacuated, the uterus strongly contracted around the child, the breech so low as that it cannot be returned, or so small as to come easily along, we ought then to deliver it accordingly; but if so large as neither to be pushed up nor brought along with the assistance of the fingers, let the operator introduce the curved handle of the blunt crotchet into one of the groins, his fingers into the other, and pull very cautiously in order to prevent a fracture or dislocation of the thigh bone, which might otherwise happen from the use of this instrument, the blunt point of which must be sufficiently past the groin. A fillet may also be used for the same purpose."

We have learned from these authors, and our own experience, that the breech may present in the most natural manner, and labor progress favorably until after the breech passes the superior strait, then, owing to the occurrence of some complication, such as hemorrhage, convulsions, or exhaustion, by which the safety of the mother and child may be compromised, it will become imperative to terminate the labor at once. Most authors say this should be done by hooking one or more fingers of the operator in the groin of the child, make traction, and dislodge the breech. Most authors also say that sometimes we fail in this, that it is impossible. The next course to pursue, as advised by a majority of authors, is then to resort to the fillet.

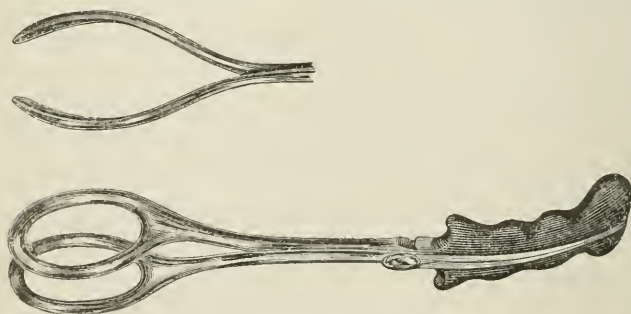
Here again numerous authors say we may fail, or if we succeed in delivering, the child may be injured and its life endangered. Then, as the last resort, we may use the blunt hook, and we will be likely to succeed with this instrument in delivering the child. But the danger to the child is so great that many discard its use entirely in the living child.

Other authors tell us that the femur may be fractured or dislocated, the genitals mutilated, the soft parts and blood-vessels so wounded as to the result in suppuration, hemorrhage, gangrene, or death. In this dilemma, what are we to do? Allow the mother and child to die, or so mutilate the child that it may soon die, or be maimed or crippled for life? It is true Dr. Barnes says he can effect delivery by bringing down one leg. But this is done under the use of "chloroform to the surgical degree." He says, "No ordinary case of turning involves passing the arm so far." He acknowledges the

operation to be "one of considerable difficulty," and he might add, one of "considerable" danger to the mother.

A few cases are reported wherein the head forceps have been applied in such cases. But in consequence of the great length of the blades and the near approach of their extremities, they will produce injurious pressure on the abdomen of the child, or lacerate the perineum of the mother. Therefore, their use in the breech is justly condemned.

Appreciating the difficulties of the methods of treatment heretofore practised, the failure of the finger, the difficulty and danger in the application of the fillet, and the still greater danger in the use of the blunt hook, the thought occurred to me that to make a style of forceps that would properly fit and grasp the pelvis, as the head forceps is made to grasp the head, would be the true principle in the treatment of breech cases. Acting on this thought, I ordered a new kind of forceps constructed for this special purpose, which was described in a paper on Breech Deliveries, read by me before the Ohio State Medical Society in June, 1876, and from which I now quote as follows: "The length of the entire instrument is $12\frac{1}{2}$ inches;



One-quarter size.

length of blades, $7\frac{1}{2}$ inches; length of the handle, 5 inches; width of blades in widest part, $1\frac{3}{4}$ inches; length of fenestra, $2\frac{5}{8}$ inches; width of fenestra in its widest part, $1\frac{1}{4}$ inches; distance of the blades at the widest part when locked, $2\frac{1}{8}$ inches; distance of the tips of the blades when locked, $1\frac{1}{4}$ inches; length of the expanded part of the blades, $4\frac{1}{2}$ inches."

"This breech forceps, by its adaptation to the anatomical construction of the pelvis of the child, will not, when properly adjusted, slip or produce undue pressure on the abdomen of the

child." I therefore prefer the use of the breech forceps to the fillet or blunt hook for the following reasons:

1st. The breech forceps are not difficult to apply.

2d. By their use rotation can be easily accomplished if required.

3d. With them we have tractile power sufficient to effect delivery.

4th. By their proper use the mother or child will not be injured.

5th. There is the same philosophy, with the exception as a compressor, in the application of breech forceps as a means of effecting speedy delivery in breech cases, as there is in the application of head forceps in head presentations.

CLINICAL CASES.

FATAL TETANUS ACCOMPANYING RETENTION OF A SEGMENT OF THE PLACENTA FOUR WEEKS AFTER MISCARRIAGE.

BY

HENRY BANGA, M.D.,

Chicago.

ON July 11th, 1878, at 8 P.M., I was summoned to see Mrs. B. Sch. I found the patient in bed, moaning under great pain. She was of middle age, and of a strongly built frame. Her face bore a sad and wearied expression, heavy drops of perspiration were constantly running down her forehead, while the nostrils moved rapidly, as in the case of one laboring under great bodily exertion. Respir. 30, of an entirely abdominal character; pulse 104, full, short; skin hot but moist. The patient was conscious, yet unable to speak distinctly, since the jaws were locked together by some stiffness of the masseter muscles, allowing of no further separation of the teeth than just sufficient to pass the point of the little finger. On examination, the muscles of the neck, the thorax, and the back were also found rigid—as were in fact all the other muscles, with the exception of those of the arms. Upon the slightest irritation, as, for instance, the patient being touched, or trying to grasp a glass, or to swallow, or to move the head, a short tremor would per-

vade the muscular system, resulting at once in tonic spasms, which made the body jump and assume a literally bow-like position, the heel and the occiput being its only support on the bed. The muscles of the arms participated in those fits, as did also the muscles of the face, which now would change its sad but calm expression to a diabolic laughing and grinning, the more hideous by contrast with the great pains that tormented the poor woman, and caused her to utter the most heartrending cries for help and relief.

The diagnosis in this case offered no difficulty: I undoubtedly had to deal with a genuine case of tetanus. As to the cause of the disease, whether it was idiopathic or of traumatic origin, I was, at that time, left in the dark, since it was only subsequently, and upon repeated inquiries even after death, that I gathered from the patient's very uncultivated relatives the following information relating to her doings before my first visit:

The patient, æt. 33, had always enjoyed good health. She had been delivered three times at term, and had had three miscarriages. Some four weeks previously the menses, after a pause of two months, had returned very profusely, being accompanied by severe labor-like pains in the back, and the discharge of large clots of blood. The patient herself thought she was undergoing an abortion. She had no medical attendant, but lay in bed for several days till the cessation of pains made her believe that "she was all right again." The discharge of blood, however, continued constantly till last Sunday, *i. e.*, six days previous to my first call, when, after the expulsion of a large clot of blood in the water-closet, no more blood was seen. "Just a show of it," however, was again noticed the day previous to my visit. Being of a careless character and not very communicative to her friends, the patient did her regular housework all the time, and went out washing. On Saturday evening she came home very tired. Sunday morning she noticed some stiffness of the masseter muscles, and complained of dryness of the throat. (On this Sunday afternoon, the last large clot of blood was expelled from the vagina, as reported above.) On Monday, Tuesday, Wednesday, trismus was gradually followed by stiffness of the neck, the back, and the chest. On Thursday, at 3 P.M., the family was alarmed by an attack of tonic convulsions, which was

followed, at 6 P.M., by a second, and at 8 P.M. by a third attack, which I arrived in time to witness. Upon the question whether the patient had contracted any external injury, I was told that she had fallen down a few steps on the back some eight or ten days previously, but had not taken further notice of it, since neither swelling nor pain remained.

The patient refusing to take medicine inwardly, I administered chloroform with admirable effect, the muscular tonus giving way after a few inhalations, thus rendering respiration free and almost natural. The utmost tranquillity in the sick-room was ordered, and a trained nurse procured for the night. An ice-bag on the head, and ice-pills inwardly, greatly helped to comfort the patient. At an early hour next morning I found the patient in about the same condition as the evening before. During the night she had had twelve attacks of tonic spasms. She was perfectly conscious, and asked how I found her. The expression of her face, however, was more wearied, the skin was very hot and covered with sudamina. Pulse 130, full; respir. 36. At 2 P.M. about the same condition; at 2.45 P.M. the patient died suddenly during an attack of general tonic convulsions.

The next day, at 1 P.M., I was allowed to perform the autopsy. Being kept on ice, the body was quite fresh. It was well developed, well nourished. On minutely examining the surface of the body I was unable to discover any lesion of the skin. Especially along the vertebral column, where the patient possibly was struck in falling a few steps down-stairs, I utterly failed to notice any discoloration, swelling, or denuding of the epidermis. Lungs and heart in normal condition. Upon drawing aside the intestinal convolutions, I was struck by the turgescence of the veins of the broad ligaments as well as of the base of the pelvis. The uterus itself was in a somewhat retroverted position, the intestinal tract separating it from the bladder. After removal from the pelvis, the uterus was found to be $3\frac{3}{4}$ inches long from the orifice to the fundus, while its breadth from one tube to the other measured $2\frac{1}{2}$ inches. Its surface was smooth; no attachments. The ovaries had a normal appearance; the right one presenting, on dissection, three small cysts as large as a bean, and one larger one, about double that size, containing some yellowish,

bloody liquid, of oily consistency (corpus luteum). The orifice of the uterus showed nothing particular. The cavity of the uterus, however, contained a large quantity of a dirty mass of dark-red color and creamy consistency; it consisted of a mixture of blood and detritus. After scraping off this bloody mass, the endometrium presented a smooth, velvety surface, excepting one spot on the anterior wall, near the opening of the right tube. Here was found a projection as large as a nickel, presenting the appearance of a remnant of placenta. One-half of it could easily be lifted from its base and crumbled into several pieces of decomposed and grayish detritus; the rest was more closely attached to the uterus. The vagina contained a large quantity of yellowish discharge of creamy consistency and offensive odor. The uterine tissue proper seemed rather bloodless; it was three-fourths of an inch in thickness. Some veins containing clots were seen on dissection. No lesions were found in the vagina or on the vulva.

The question now arises, whether the retention in the uterus of portions of the after-birth can account for the origin of tetanus? I am inclined to answer this question in the affirmative, for the following reasons: In the first place, a uterus in the condition above described must be regarded as analogous to any wound undergoing the healing process. Thus, any complication which may disturb the healing process of a wound in some other part of the body, may also occur in connection with the involution of the uterus and the restoration of its lining membrane after the expulsion of a fetus. The resemblance between the tetanus occurring in the course of our case of abortion and the tetanus as complication of some other wound, seems the more obvious, since it is universally accepted by surgeons that tetanus is most likely to supervene in wounds in which a foreign body maintains that peculiar, though still unknown, irritation to the nervous system which results in tonic spasms. For in this case the remnant of the placenta in the uterus may, in a certain way, be looked upon as a foreign body, bearing the same relation to the uterine cavity and the origin of tetanus, as, in other cases, a splinter or a piece of a nail left in a wound on the finger or toe. I therefore think myself justified, in accordance

with the facts, in reporting this case of tetanus as one of genuine traumatic origin, a diagnosis in which my friend, Dr. Manheimer, at whose request I attended the patient in his absence, entirely concurs.

CHICAGO, SEPTEMBER 6TH.

AN EXTRAORDINARY CASE OF TOLERATION OF OPIATES IN AN
INFANT, AND TENACITY OF LIFE WITHOUT FOOD
FOR THIRTY DAYS.

BY

D. B. SIMMONS, M.D.,

Surgeon to Ken Hospital, Yokohama, Japan.

WE found the subject of the above, a few hours after birth, to have an imperforate rectum, one and a half inches above the anus.

Having failed to force a passage by mild means, the parents were informed that there was no hope but in surgical interference. When they became aware, however, that this even was unsuccessful in the vast majority of cases where the seat of the occlusion was so high up, they decided on non-interference, especially as there was also a congenital deformity of the penis. As the fatal termination of this condition of things was only a matter of time, the main question to be settled now was how to tide it over with the least possible suffering to the little creature.

To give it food was thought would only cause distress, by accumulation, flatulence, etc. It was therefore decided to feed it on a little sugar and water only. Notwithstanding this, at the end of the fifth day, it began to cry piteously, from time to time, more apparently from pain than hunger. I prescribed a few drops of tr. opii comp., to be increased if necessary. On the sixth day, the nurse requested me to give something stronger, as she had reached teaspoonful doses every four hours, without producing the effect of quieting the little sufferer. I now ordered tr. opii, 5 drops to be commenced with, to be gradually increased if the desired effect was not obtained. On the eighth day I was again requested by the nurse for something stronger, as during the last 48 hours she had frequently

given the child one-half teaspoonful doses of the laudanum, without producing more than a temporary relief, and on an attempt to increase the quantity it had been rejected by the stomach.

I now ordered Magendie's solution of morphine (gr. 16, water, $\bar{5}$ i.). The dose commenced with was $2\frac{1}{2}$ drops = $\frac{1}{12}$ gr. morphine = opium, $\frac{1}{2}$ gr. This was also to be gradually increased, if necessary. On the sixth day I found, to my surprise, that one drachm = morphine gr. ij., had been administered during the night, which had only produced sleep for six hours, and comparative freedom from suffering for six more. This was repeated on three successive nights, with about the same result as far as its narcotic effect was concerned. As the symptoms of prostration were more marked than with the tr. opii comp. and tr. opii, probably in consequence of the withdrawal of the alcohol they contained, an alternation of all three was had recourse to for the remainder of the time, viz., seven days, or till the thirty-second from birth, when death put an end to the suffering of the little creature.

A scarcely less remarkable feature of this case was its existence without food, other than the slightly-sweetened water before referred to, for the whole period of its life (32 days).

YOKOHAMA, JULY 12TH, 1878.

IN MEMORIAM.

WASHINGTON LEMUEL ATLEE.

DR. WASHINGTON LEMUEL ATLEE was born at Lancaster, Pa., February 22d, 1808. He was a descendant of an old English family, many members of which reached distinction very early in the history of England. "Wm. Atlee,¹ of Ford-Hooke House, England, married, against the wishes of his family, Jane Alcock, a cousin of Wm. Pitt, and being, perhaps for that reason, thrown upon his own resources, obtained,

¹ Pennsylvania Magazine of History and Biography, Vol. II., No. 1, p. 74.



Washington L. Atlee M.D.

through the assistance of Pitt, a position as secretary to Lord Howe. He came with Howe to America, landing in Philadelphia in July, 1734." His son, the Hon. Wm. Augustus Atlee, was an active Whig during the Revolutionary war, and was one of the judges of the Supreme Court of Pennsylvania.

He left several children, amongst whom was Wm. Pitt Atlee, Esq., a lawyer who married Miss Light, the daughter of Major John Light, an officer in the Revolutionary army. They had six children, of whom the subject of this memoir was the youngest. When he had reached the age of seven years, his father died, leaving him under the care of his grandparents. While with them, he continued at school, pursuing the ordinary English studies until he was fourteen years old, when, contrary to his own wishes, he was placed in a dry-goods store.

After remaining in this business for fifteen months, he determined to leave it and study medicine. He chose his brother, Dr. John Light Atlee, as his preceptor, who made him a member of his family and directed him in his studies.

Thus encouraged he worked with ardor, and with the aid of tutors supplied the deficiency of an early classical training, studying at the same time French, German, Philosophy, and the natural sciences. He entered the Jefferson Medical College in the winter of 1826-27, where his industry and talents attracted the attention of Dr. Geo. McClellan, the Professor of Surgery, who invited him to become his private pupil.

Stimulated by the example and guided by the counsels of this great teacher, the efforts of young Atlee were redoubled, and on his return to Lancaster he at once engaged in practice amongst the poor, almost living in the Lancaster County Hospital. His efforts were so successful, and he became so popular, that before he received his degree he had attended forty cases of obstetrics.

His connection with the hospital gave him abundant opportunity to study practical anatomy, of which he was very fond; and much of his time was employed in dissection. Nor did these engagements fully occupy his time, for "during the summer of 1827-28, he actively pursued the study of practical botany, and was a correspondent of Dr. Wm. P. C. Barton, then Professor of Materia Medica and Botany in the Jefferson

Medical College. He collected about four hundred specimens of Lancaster County plants into an herbarium, accompanied with a written description of each plant, which collection he subsequently presented to the Linnean Society of Pennsylvania College, at Gettysburg, Pa."

Continuing these industrious habits, he returned to Philadelphia, attended another course of lectures, and was graduated in the spring of 1829. The subject of his thesis was "Parotitis Gangrenosa," an original title, the case described in it having occurred in his own practice.

Believing a small town to promise the most rapid advance in the earlier years of professional life, he selected Mt. Joy, a small village about twelve miles from Lancaster, as a suitable place for his first settlement. While residing here, he was married to a lady to whom he had been long attached, Miss A. E. Hoff, daughter of John Hoff, Esq., of Lancaster. The union proved exceedingly happy, and ten children were born to them, six of whom survived their father, Mrs. Atlee having died eight years before her husband.

In the autumn of 1834, he removed to his native city, where he continued energetically at work and was rewarded by a large practice. Soon after his return to Lancaster, he gave a regular course of lectures on chemistry to private classes. This he continued for several years, and also delivered one public course before the Mechanics' Institute of that place. These efforts established his reputation as a lecturer on chemistry, and led to his receiving an invitation, in 1844, to fill the chair of Medical Chemistry in the Medical Department of Pennsylvania College, at Philadelphia. He accepted this position and moved his family to Philadelphia, which from that time he made his permanent residence. His practice, which was then general, increased very rapidly, and occupied so much of his time that he found it extremely burdensome to continue his lectures, but he did not sever his connection with the college until the spring of 1852, when he resigned his professorship, and devoted himself almost exclusively to surgical and gynecological practice.

While still in Lancaster, he was known as a skilful and courageous operator, and the publication of some of his cases in the *American Journal of the Medical Sciences* had also

introduced him favorably to the medical public ; but, before leaving that city, he performed and published two operations which fixed the eye of the profession upon him as a dangerous innovator, as a man who had been performing an operation which had been previously undertaken, and had proved so unsuccessful that it had been condemned even by some of those who had practised it—ovariotomy.

Besides, there was a cloud of doubt and distrust which hung over the early history of the operation, which had not then been cleared away, and further it had been attempted but by few men of note, most of whom, after a brief trial, had abandoned it, both on account of its fatality and the difficulty attending the diagnosis. In fact, ovariotomy was an operation universally denounced, and he must be a brave and determined man who should dare attempt to establish its legitimacy. This he proposed to do, his early experience having led him to believe it a justifiable measure.

He has shown how carefully and conscientiously he prepared himself for the difficult task before him, and has also shown how great was the odium brought upon him by the performance of this operation, in his address as president of the Philadelphia County Medical Society, entitled “A Retrospect of the Struggles and Triumphs of Ovariotomy in Philadelphia.” In this interesting history he says, “I found upon moving to Philadelphia that ovariotomy was everywhere decried. It was denounced by the general profession, in the medical societies, in all the medical colleges, and even discouraged by the majority of my own colleagues. I was misrepresented before the medical public, and was pointed at as a dangerous man, even a murderer. The opposition went so far that a celebrated professor—a popular teacher and captivating writer—in his published lectures invoked the law to arrest me in the performance of this operation !”

This address shows clearly the status of the operation and the unmerited opprobrium visited upon those who had the temerity to perform it at that early day. But a reward was in store for a struggle of years against professional prejudice ; for he became so identified in the public mind with ovariotomy that, after its success was established, his services were in demand on every side.

From Maine, from California, from North and South, in fact from every State and Territory continually arrived letters, urging him to come and operate. He visited, for this purpose, one of the New England and two of the extreme Southern States, within the same week. These distant cases made it necessary for him to relinquish family practice; but when at home, he was kept busy with consultations, and his offices were filled by patients, many of them coming from long distances to seek relief at his hands. His success was great, and was the result, not only of consummate skill and care as an operator, but of the wonderful diagnostic tact he never failed to manifest.

As an operator he was cool and fully prepared for all emergencies. He avoided a needless array, and, although having a full reserve of instruments, used but few. His friend, Prof. Gross, in speaking of this, says: "With the knife he was, in his particular line, *facile princeps*. He appreciated the aphorism of Desault, that simplicity is the perfection of an operation. He rarely used more than one scalpel, one bistoury, one pair of forceps, one pair of scissors, and one needle. He had a just horror of display. The duties having been duly assigned to his assistants, everything proceeded as silently as possible, with the regularity of clock-work. Always self-possessed, his eye never quailed, his hand never trembled."

He was in the habit of giving his diagnosis to the medical gentlemen present before he commenced an operation, and, if he had any doubt, he told it plainly, and gave his reason for it. This, of course, afforded all present an opportunity of judging of the correctness of his opinions; and, in a close association with him of thirty years, I can recall but few errors. It is remarkable that, with so little leisure, he managed to perform so much clerical labor; for he carried on an extensive correspondence, frequently contributed to the journals, wrote an octavo volume on ovarian tumors, besides essays on subjects connected with gynecology, and kept full notes of all important cases, recording them the day they occurred; nor would he sleep until all intended work of this kind had been accomplished.

Although his time was so fully occupied, he did not fail to keep himself perfectly familiar with the medical literature of the day, and with the improvements in medicine; and none was

more ready than he to recognize and adopt them. He also added to the success of his operation by planning new methods of procedure in particular cases, among which may be mentioned, the use of the ecraseur to divide the pedicle in ovariectomy, which he was the first to employ, June 17th, 1857. He also practised enucleation in the same operation as early as July 25th, 1850. Many of the instruments he used were invented or improved by himself, as, for instance, the well-known clamp which bears his name.

He was the first to clearly indicate the importance of tapping as a means of diagnosis in obscure cases of abdominal dropsy, and also the first to point out the true value of the removed fluids for the same purpose, particularly to differentiate cysts of the broad ligament and fibro-cystic tumors of the uterus from ovarian tumors. It is well known to surgeons that in ovariectomy the thickened and opaque peritoneum has been frequently mistaken for the cyst, and separated from the muscles for some distance before the error has been discovered. This mistake, besides embarrassing the operator, has added to the risk of the operation, and no method of avoiding it was known until Dr. Atlee pointed out a safe and valuable guide, depending upon a knowledge of the anatomy of the part, by which such an error was made impossible. This test is the passing up of the hand or of a sound to the umbilicus, when, if it be peritoneum, the hand is arrested, but if it be the cyst, it passes easily. There was a remarkable originality in him, which was frequently displayed in his operations. It was manifested in his case of vaginal ovariectomy, which antedates all others.¹

But, perhaps, this was more strikingly seen in his operation for the removal of uterine fibroids. His first case of this kind occurred in 1845. Its complete success fully disproved "the position hitherto esteemed as an axiom by surgeons of authority, that polypus of the uterus cannot be subjected to operative measures until it has escaped from the uterine cavity."² The numerous cases following this, he embodied in a paper which was one of twelve essays presented to compete for the prize at the meeting of the American Medical Association,

¹ Gynecological Transactions, Vol. 2, p. 266.

² Prize Essay, p. 25.

held in the City of New York, in 1853. His paper was one of the two to which the prize was awarded. It was entitled "The Surgical Treatment of Certain Fibrous Tumors of the Uterus, heretofore considered beyond the resources of Art." A synopsis of some of the cases contained in this essay was previously embraced in the *Report on Surgery* in 1850 by Professor Mussey, who says: "Of all the achievements of modern surgery, we meet with none more striking or extraordinary than the operations performed by Professor Atlee for the removal of intrauterine fibrous tumors."

Professor Pallen, in his prize essay, presented to the American Medical Association in 1869, says: "In 1853, Dr. Washington L. Atlee startled the profession by this method of heroically attacking uterine tumors with the knife. . . . His successes were numerous, and the ingenuity of his devices are deserving of the highest commendation." And Dr. J. Marion Sims, in the *New York Medical Journal*, April, 1874, writes: "The name of Atlee stands without a rival in connection with uterine fibroids. His operations were so heroic that no man has as yet dared to imitate him. A generation has passed since he gave to the world his valuable essay on the surgical treatment of fibrous tumors of the uterus; but it is only within the last five or six years that the profession have come to appreciate the great truths which he labored to establish. Meadows, of London, and Thomas, of New York, have each achieved splendid results in this direction, and made valuable contributions to our literature. A few isolated cases of fibroid enucleation have been published by others, and this is about all that we can boast of since Atlee first led the way for us."

The last paper which he wrote on this subject was entitled "The Treatment of Fibroid Tumors of the Uterus." It was read before the International Medical Congress, September, 1876. In it he gave the result of his great experience in the treatment of these growths, both by medical and surgical means. This elaborate paper evinced great originality, and was warmly applauded by the section before which it was read, composed of some of the most distinguished men in this branch of medical science.

With all these engrossing labors, he never ceased to feel the warmest interest in the general welfare of the profession.

He took an active part in the organization of the Philadelphia Co. Medical Society, of the Medical Society of the State of Pennsylvania, and of the American Medical Association. He was also one of the founders of the American Gynecological Society. In all of these bodies he retained his membership until his death. Of the Philadelphia Co. Medical Society he was president in 1874, and president of the State Medical Society of Pennsylvania in 1875. In the same year, he was vice-president of the American Medical Association, and first vice-president of the American Gynecological Society in 1876-77.

At the meetings of these bodies, "he was known as a brilliant extempore speaker and an able debater; his influence being always exerted in favor of a higher medical education, and a broad and liberal construction of the rights and duties of medical life."¹ In his long connection with these societies, he allowed nothing but the most urgent engagements or sickness to interfere with his attendance on their meetings. That this interest was earnest and sincere was well seen in the last journey which he took, which was to attend the meeting of the State Society at Pittsburgh in May, 1878. He was then so feeble as to require support in walking, and so emaciated that every movement was painful to him, and yet he endured the trying journey merely to meet them once more.

It is almost needless that with his warm attachment to the profession, he was scrupulously correct in all that related to medical ethics and in his intercourse with his medical brethren honorable and considerate.

But these professional labors of a life give us but little idea of the man, except of his capacity for work, his increasing industry and his untiring energy. In this brief sketch, no allusion has been made to his more marked personal traits, but a memoir of him would indeed be incomplete which should fail to represent that he was a most devoted husband. This devotion which commenced in his early days, and only ceased with life, was a beautiful feature in his character which, although it may be thus mentioned, is too sacred to be dwelt upon.

He was an affectionate father, a firm and warm friend, and

¹ Physicians and Surgeons of the United States, p. 560.

a thoroughly conscientious, honest, and truthful man. In person, he was above the ordinary stature, erect and commanding in his carriage, his face benevolent, his manners courteous and dignified, and although kind, forbidding familiarity. In the sick-room, he was uniformly cheerful, and as tender and sympathetic as a woman. His very appearance inspired confidence. His movements were quick and decided, indicative of his character. Although nearly threescore years and ten, his eye was undimmed, his mind was strong and clear, his perception quick, and his judgment sound. He was a man of strong feelings, but had complete control of them. Although firm in his opinion, he was tolerant of those of others.

He was benevolent, hospitable, and, above all, a religious man. Not ostentatious, nor one who loved to parade his goodness before the world; but those who knew him best can testify to his thorough conscientious regard for all his Christian duties. When but a young man he was confirmed in Christ Church, Philadelphia, by the venerable Bishop White, and ever remained a consistent professor of religion, conscience influencing every important action of his daily life.

“A life well spent, whose early care it was
His riper years should not upbraid his green.”

After contributing so much to the relief of human suffering, it might have been hoped that his last days would have been peaceful, and free from pain, but in April, 1876, the disease which terminated his life after intense suffering, seized on him. At this date he performed operations in three different cities on three succeeding days, travelling for this purpose three nights in succession. One of the patients on whom he operated was suffering from cancer of the uterus. He returned home feeling greatly prostrated and at once took to his bed. He had a low fever, a tympanitic abdomen, and tenderness in the left iliac region, in fact had most of the symptoms of a patient in the second week of typhoid fever. He recovered from this in about ten days, but from that time his health failed, he lost color, and emaciated rapidly. About six months before his death he was attacked with rheumatism which added greatly to his distress, but no marked local symptoms manifested themselves until last February, when a small hard mass was

found projecting below the border of the ribs on the left side. This increased rapidly, and by June extended from the nipple to the anterior superior spinous process of the ilium. It consisted of a comparatively soft mass above, terminating below in hard nodules. It was supposed to be a malignant disease of the spleen. The liver was also greatly enlarged, its lower border touching the anterior superior spinous process of the ilium of the right side.

In the latter part of June, the tumor slowly diminished in size, and continued to contract until nothing could be felt of it except the hard nodules just below the ribs.

In the autopsy, made on the day after death, the spleen was found enlarged to about twice its usual size, but was healthy in structure. It was located more anteriorly than normal, and just under it was a large tumor, which a careful examination proved to be the left kidney. It reached from the diaphragm above to the promontory of the sacrum below, and was firmly adherent to the parts beneath it, incorporating the aorta and other vessels in its mass. Its estimated weight was between two and three pounds.

It proved to be a medullary cancer of the left kidney, its upper border being hard, while the remainder of the mass was cerebriform.

In its early stage it evidently pressed on the vessels of the spleen and liver, producing congestion of these organs, which in the last two months was relieved by the softening of the mass. The spleen being thus greatly enlarged and covering the diseased kidney like a cushion, led us into the error of supposing it the organ at fault. The urine was carefully and frequently examined in all stages of the disease, but nothing abnormal was ever found in it. The right kidney was rather larger than normal, and contained in its cortical substance a number of cysts, some of them as large as a nutmeg, and filled with a yellowish fluid.

The heart contained, in the right ventricle, and firmly attached to its right wall and to the columnæ carneæ, a growth of a light-fawn color and firm consistence, about the size of a large English walnut. It was situated just below the tricuspid valve. The mitral valves were thickened, but the aortic valves were healthy.

The disease having been recognized in February, all hope of cure was abandoned, but he persisted in attending to his practice, and continued to operate until three months before his death. His last operation was performed at Sligo, Clarion Co., Pa., May 30th, 1878. This was his 387th case of ovariectomy. Although he continued to attend to office patients for some time after this, his suffering and weakness soon confined him to his room, and compelled him to divide his time between a reclining chair and his bed. He settled all his worldly affairs, yet he did not lose his interest in his profession, but continued to read the medical journals and see his friends, making but little complaint, and patiently awaited the final summons. The waste of body did not impair his intellectual faculties, for his mind remained clear until the last. Although he knew that his end was rapidly approaching, he showed no fear of death, but welcomed it, not only as a relief, but as a means of realizing his hopes as a Christian.

“About the hour of eight (which he himself
Foretold should be his last),
He gave his honors to the world again,
His blessed part to heaven, and slept in peace.”

THOMAS MURRAY DRYSDALE.

The following is a complete list of his published writings upon the subject of gynecology :

- “A Case of Ovariectomy.” *American Journal of Medical Science*, 1844.
- “A Case of Successful Extirpation of a Fibroid Tumor of the Uterus by the Large Peritoneal Section.” *Ibid.*, 1845.
- “A Tabular Synopsis of One Hundred and One Operations of Ovariectomy.” *Ibid.*, 1845.
- “Two Cases of Protracted Gestation.” *American Journal of Medical Science*, 1846.
- “Excision of the Cervix Uteri for Carcinomatous Disease.” *American Journal of Medical Science*, 1848.
- “Ovarian Dropsy Cured by the Long Abdominal Incision in 1701.” *Ibid.*, 1849.
- “Three Cases of Ovariectomy.” *Ibid.*, 1849, 1850.

- "Analysis of One Hundred and Seventy-nine Cases of Ovariectomy." *Ibid.*, 1850.
- "A Table of all the known Operations of Ovariectomy from 1701 to 1851." Comprising Two Hundred and Twenty-two Cases, and giving a Synoptical History of each Case.
- "On the Treatment of Certain Fibroid Tumors of the Uterus, heretofore Considered beyond the Resources of Art." (Being the Treatise for which the prize for the year 1853 was awarded by the American Medical Association.) Transaction American Medical Association, 1853. Also in pamphlet.
- "On Placenta Prævia." The Medical and Surgical Reporter, Philadelphia, 1858.
- "A Case of Vesico-Vaginal Fistula." American Journal of Medical Science, 1860. Also pamphlet.
- "A Case of Acute Puerperal Tetanus." *Ibid.*, 1860.
- "A New Cause of Vesico-Vaginal Fistula." Reply to Prof. Brickell. Maryland and Virginia Medical Journal, 1861.
- "A Case of Quadruple Birth." Medical and Surgical Reporter, Philadelphia, 1860.
- "Numerous Cases of Ovariectomy," published in the American Journal of Medical Science, and in the Medical Times of Philadelphia.
- "A New Clamp in Ovariectomy." American Journal of Medical Science, 1871.
- "The Uterine Dilator." *Ibid.*, 1871.
- "The Use of the Speculum in the Diagnosis and Treatment of Diseases of the Uterus," being the Address in Obstetrics before the Medical Society of the State of Pennsylvania. Transactions of Medical Association of Pennsylvania for 1872.
- "General and Differential Diagnosis of Ovarian Tumors with Special Reference to the Operation of Ovariectomy." 1 Vol. Published by J. B. Lippincott & Co. Philadelphia, 1873.
- "A Retrospect of the Struggles and Triumphs of Ovariectomy in Philadelphia," being the annual address before the Philadelphia County Medical Society, by the retiring President, in 1875. Also pamphlet.
- "A Female with Double Organs of Generation." Transactions of Medical Society of Pennsylvania, 1873. Also pamphlet.
- A paper on "The Treatment of Fibroids of the Uterus." Read before the "International Medical Congress," September, 1876. Transactions of International Medical Congress, Philadelphia.
- A paper on "Sarcoma of the Ovaries." Read before "The American Gynecological Society," Boston, 1877. Transactions of American Gynecological Society.
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TRANSACTIONS OF THE OBSTETRICAL
SOCIETY OF NEW YORK.

Stated Meeting, May 7, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

CONGENITAL MYXO-SARCOMA OF THE THIGH.

DR. B. F. DAWSON presented a child, seven weeks old, whose right thigh was the seat of a large tumor. When the child was born, the tumor was about the size of an orange, and somewhat pointed. Its color was uniform with that of the surrounding skin, with the exception of the summit, which was slightly dark in color.

The physician who attended the mother, supposing that the tumor contained fluid, incised it at the point where the discoloration was situated, but nothing was obtained except one or two drops of blood.

A few days after, a second puncture was made, but no fluid was obtained.

Since that time the tumor has increased in size, and the discoloration of its apex had gradually extended. Within the past week it had changed very much in appearance; the eroded portion was much more prominent, and there was more or less discharge from its surface.

When born, the child seemed perfectly healthy; but it was rapidly declining, and had been vomiting considerably during the last few days. There was no enlargement of the glands in the groin.

The mother and father were apparently perfectly healthy, and the five other children were also healthy.

From the location of the tumor and the good health of the child, Dr. Dawson was of the opinion that the growth was a myxosarcoma.

On the 2d of November last, at the request of Dr. Hubbard, he had operated upon a lady for the removal of a cervix uteri which was the seat of carcinoma.

The mother of the child, then in the fourth month of pregnancy, was present at the operation. The mother and the friends were quite positive that the tumor upon the thigh of the child was the result of being present at the operation for the removal of the cancer.

DR. JACOBI remarked that he saw the child about ten days ago. At that time the entire tumor was covered with a tense healthy

entis, and the tumor was apparently more solid than at present. He suggested, at that time, that the growth was sarcomatous and more or less cystic. Since that time the tumor had opened at a few places and a viscid liquid had been discharged, thus proving that the diagnosis in that respect was not far from the truth, and that the solidity of the tumor was to a considerable degree only apparent. Dr. Jacobi was of the opinion that the growth did not have its origin either in the skin or in the subcutaneous tissue, but probably in the lower portion of the epiphysis of the thigh. The epiphysis of the thigh in the new-born child reached below the trochanter; in fact, the trochanter, neck, and head of the femur was only one large epiphysis. It was in that region that tumors were more apt to originate, even in children more advanced in years, say from four to seven years of age. It was in that region that enchondromata were frequently developed, and not infrequently multiple exostoses occupied the same locality. It was thought probable that the tumor in this case originated in the cellular structure of the epiphysis. It was a fact that the larger number of neoplasms had a cellular structure, therefore were termed malignant. The earlier the period in life at which the tumor originated the more cellular it was, hence the larger number of congenital neoplasms were malignant. At the same time, one fact should not be lost sight of, namely, that the tissue of the early fetus, if it can be spoken of as tissue, consists largely of cells, while, as the child becomes older, the tissues become more fibrous. Undoubtedly the tumor exhibited was made up of embryonic tissue, was therefore necessarily cellular, and probably sarcomatous with a mixture of cystic formation. The fact that the inguinal glands were not involved suggested that the tumor originated when lymph vessels were scarce, if not entirely absent. Lymph-vessels upon the epiphysis were not abundant.

Dr. ROBERT WATTS reported the following case of

COMPLETE INVERSION OF THE UTERUS; REMOVAL OF FIBROID FROM THE FUNDUS, AND REDUCTION OF THE INVERSION AFTER THIRTEEN YEARS.

"M. H., a colored woman, widowed, aged 28 years, was admitted to the Roosevelt Hospital on March 9th, 1877, having been sent to me from the country, and gave the following history:

Menstruation began when she was 13, but was not regular. At 14 she married, and about one year later had a miscarriage at the seventh month. A year afterwards, she was delivered of a child at full term, being attended by a midwife. After delivery, flowing continued for four weeks, and then gradually ceased. During lactation, she had irregular hemorrhages, lasting four or five days at a time, and during this period suffered severely with pain in the back. For the last eleven years she had menstruated pretty regularly, the flow sometimes being much more profuse than at others.

In the summer of 1876, the womb, she states, came outside of

her body, though she was sitting quietly at the time. She replaced it in the vagina. Some hemorrhage followed, but she went to bed, and it soon ceased. Since then she has had a bearing-down feeling in the pelvis, and the uterus is occasionally extruded from the vagina, especially during micturition or defecation. For the last year, she has had a succession of irregular hemorrhages, rather than any natural menstruation. As soon as these commenced, she was obliged to go to bed, and in the course of a week the bleeding would stop. In January, 1877, she had a severe hemorrhage, and was then obliged to consult a physician. Since then there has been but little flowing. It was at first supposed by her physician that she had a polypus, but a diagnosis of inversion was afterwards made, and she was sent to the hospital for treatment. Her condition, when she entered the hospital, was fair; pulse and temperature normal; urine acid, 1023, and contained a trace of albumen, with some pus and blood-corpuscles, probably from the vagina; she also showed evidences of having had syphilis.

March 10th, 1877.—On examination, the vagina was found occupied by a pear-shaped tumor, larger at its lower portion, with a protuberance on its left side, at the upper part. By conjoined manipulation and the other usual methods of exploration, this tumor was found to be the uterus completely inverted, and containing a submucous fibroid tumor in its left side, just above the os internum.

The inversion was so complete that there was no well-defined sulcus around the neck of the tumor, the walls of which seemed to be continuous with the roof of the vagina.

Dr. Emmet saw the case in consultation, and concurred in the diagnosis. The patient was put upon the use of ergot, with the idea of causing the extrusion of the fibroid from the wall of the uterus.

On March 19th, a sharp hemorrhage began, which was controlled by injections of alum, gr. v. ad $\frac{3}{4}$ i.

On March 31st, the fibroid was removed. The uterus was drawn down outside the vulva by means of a noose, and the mucous membrane was incised over the tumor, which was then very easily enucleated. An effort was then made to reduce the inversion, but was desisted from after two hours, no progress having been made. The fibroid was spherical in shape, measuring one and a half and two inches in different diameters. A colpeurynter was introduced into the vagina and distended. The use of this was continued for two or three weeks, it being removed each night and morning, when the patient received a hot vaginal douche, but without any benefit. No unpleasant symptoms fol-

lowed the operation, and on May 4th, 1877, a second attempt at reduction by taxis was made for $1\frac{3}{4}$ hours, but failed. The patient had some abdominal tenderness after this, and her temperature rose to $103\frac{1}{2}^{\circ}$ the next day, but subsided quickly, and no unfavorable symptoms followed.

In June, she returned to her home. During the summer she suffered very much with pain in the back, and had several attacks of hemorrhage. While in the country an attempt was made to reduce the uterus, but failed.

On November 15th, 1877, she re-entered the Roosevelt Hospital. She was then bleeding quite freely, but this was quickly checked by the hot douche, which was used four times daily until November 23d, when another attempt was made at reduction. White's repositor was used in the manner recommended by him and steady pressure upon one cornu, as recommended by Dr. Noeggerath, was also tried, but the internal os would not yield, and after $3\frac{1}{4}$ hours this attempt was also abandoned, as the patient was acting badly under the ether.

No unpleasant symptoms followed this manipulation. The uterus, however, became a good deal swollen, and the hot-water douche was used daily. This was continued regularly until February 23d, 1878, when the uterus was found considerably reduced in size, and a well-marked sulcus could be felt around the neck of the tumor. On the above date, the patient was etherized, and another effort made to reduce the inversion, which fortunately proved successful. During the morning of the day on which this last attempt was made, the hot douche was used for two hours.

In this last operation, the uterus was grasped by one hand in the vagina, and steady pressure made upward upon the fundus, counter-pressure being made through the abdominal walls; Prof. White's repositor was also used to press upon the fundus. At the end of two hours, no impression seemed to have been made upon the ring, which was firmly contracted.

I then drew the uterus down outside the vulva, and introducing the forefinger of the left hand into the rectum, inserted its tip into the constricting ring, while with the right hand the body of the uterus was pressed firmly backward against the finger in the rectum. By this manœuvre, the ring was somewhat dilated, and finally the tips of two fingers could be introduced. The uterus was then returned within the vagina, and while firm counterpressure was made through the abdominal wall, pressure with the thumb was made against the right cornu, after the manner recommended by Dr. Noeggerath. This, after some time, became indented, and finally slipped up before the thumb through the ring. Pressure was then made upon the

left cornu, which, together with the fundus, easily passed up, and the inversion was reduced. The operation lasted $3\frac{1}{4}$ hours. The finger was afterwards passed into the cavity of the uterus to make sure that the reduction was complete.

The uterus was then washed out with a large quantity of hot water, by which all oozing of blood was stopped.

The patient had no unfavorable symptoms after the operation, and at the expiration of ten days was allowed to be up and about.

After the lapse of three weeks, it was found that the cervix and external os still remained so patulous that the index finger could be easily passed up to the internal os, which was contracted. The cervix, indeed, presented an appearance as though it had been lacerated, although such was not the case. The application of astringents had failed to produce any contraction, and as the patient was desirous of returning to her home and resuming her housework, it was considered prudent to diminish the size of the external os by an operation similar to that for lacerated cervix.

On March 23d, the operation was performed, two silver sutures being introduced on each side. These were removed at the end of a week, and union was found complete.

On April 6th, the external os was just large enough to admit the point of the index finger, and the uterus measured two and a half inches in depth. The patient was discharged.

The method adopted in the foregoing case of drawing down the uterus and inserting the point of the finger into the ring through the rectum was of great service, and seems worthy of attention. By this means greater pressure can be used, and in a more direct manner, the tissues intervening between the finger and the ring being much thinner than when counterpressure is made through the abdominal walls, while at the same time the danger of lacerating the vagina is much less than when pressure is made upwards in its long axis by the hand within it. In this latter procedure, the vagina is made a point of resistance, and is subjected to severe longitudinal stretching, while in the method just described, no strain whatever is put upon its walls.

Another and not a trifling advantage of this plan is that it relieves the operator from the fatigue and pain caused by keeping up pressure, for any length of time, by the hand in the vagina.

Courty (*Maladies de l'Utérus*, 1872) reports a case of inversion reduced by him in a somewhat similar manner; but he used the fingers in the rectum simply to hold the uterus in a fixed position. On page 919 he describes his method as follows: 'The uterus is drawn down outside the vulva with Muzeux's forceps; then, introducing the index and middle fingers of the right hand into the rec-

tum, carrying them above the uterus, and bending them forward in the shape of hooks, the neck of the organ is fixed through the rectal wall. Seizing the uterine with the left hand, it is returned into the vagina, still holding the neck hooked with the finger of the right hand, and is turned so that the fundus, held in the palm of the hand, is towards the pubes instead of being towards the rectum, and the neck looks towards the sacrum, held in this way by the fingers of the right hand. These fingers hook the cervical portion of the womb through the rectal wall, and being separated, rest firmly in the angular sinuses which the utero-sacral ligaments form on each side by their insertion, right and left, to the postero-lateral face of the uterine neck. Then with the thumb and index finger of the left hand pressure is made upon the pedicle of the tumor, so as to increase the depth of the utero-cervical groove, and by making efforts at taxis while holding the neck fixed, the reduction of the uterus takes place in a few minutes, little by little, slowly, and without violence.'

In the case now reported, the finger in the rectum was used as a wedge, a very important factor, it seems to me, and being a comparatively fixed point of resistance, the uterus was forced down upon it and dilatation effected."

DR. DAWSON referred to a similar case which was reported in the April number of the *Cincinnati Lancet and Examiner*. In the report, great stress was laid upon the introduction of one index finger into the rectum, the other into the bladder, and, while traction was being made on the cervical ring with the fingers, exerting pressure upon the inverted mass with both thumbs.

DR. JOHN G. PERRY, in connection with the above subject, related the following

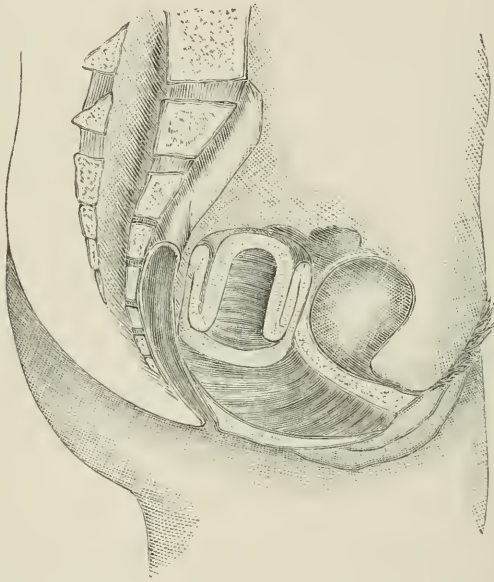
CASE OF INVAGINATION OF THE PUERPERAL UTERUS.

A multipara, æt. 20, passed through her gestation well, the only abnormal feature being an excess of phosphates in the urine.

Labor began in a normal manner, and Dr. Perry was called at five o'clock in the morning. Upon examination, it was found that, although the pains had been quite severe, the first stage of labor had not commenced. At seven o'clock, the head was fairly upon the floor of the pelvis, and yet it was completely surrounded by the cervix. Chloroform was administered and when the woman was profoundly anesthetized, the cervix dilated rapidly, and the child was soon born. The placenta was quickly expelled; the uterus contracted firmly. A few moments after, and while the doctor was holding the contracted uterus in his hand, the uterine tumor quickly disappeared. A vaginal examination was immediately made; the cervix uteri was found fully dilated, and the firmly contracted fun-

dus was found as it had settled down into the cervical ring. The fundus was grasped and crowded up against the abdominal wall, and while being held there for a few moments, the woman went into a tonic convulsion. She had three convulsions, and in the mean time there was no retraction whatever of the uterus.

At the threatening of a fourth convulsion, chloroform was resorted to, with the apparent effect of interrupting its occurrence. The woman was kept partially under the influence of the anesthetic, and at the end of about one hour the uterus began to retract and contract, the cervix taking part; the retraction went on, became complete, and no further trouble ensued. The woman made a good recovery.



The case was regarded as an illustration of one of the ways in which the uterus becomes inverted. There seemed to be complete inertia of the cervical muscular fibres, permitting it to dilate to the full size of the vagina. There was no laceration of the cervix, nor of the perineum, and there was no hemorrhage at the time the child was born. The child weighed nine pounds, and was healthy. Dr. Perry did not disturb the fundus at all, except to simply lift it up and hold it until retraction took place. The shock to the patient when the accident occurred was immediate and alarming. Dr. Perry was unable to explain the occurrence of the convulsions.

DR. NOEGGERATH remarked that the occurrence of convulsions

was an interesting feature in Dr. Perry's case. There was a class of cases in which imperfect uterine contraction was accompanied either by convulsions or by excessive neuralgic pains in other parts of the body. The pains in such cases had been denominated *metastatic*. The presence of convulsions was evidence that the spinal centre, which was most active during *perfect* uterine contraction, was at fault, so that only *imperfect* contractions took place, and the remainder of the nervous force was expended in the production of convulsions. The same cause was in operation in cases in which after-pains ceased and convulsions developed; and the alternate occurrence of after-pains and convulsions might continue for some time. In the absence of after-pains, extreme neuralgic pains throughout the body might be developed. Wiegand was the first to call attention to this fact, that probably, when partial contraction of the uterus was accompanied by convulsions, the convulsions were due to the nervous energy not being spent in contracting the uterine fibres.

HEMORRHAGE AFTER AMPUTATION OF THE CERVIX BY GALVANO-CAUTERY.

DR. HUNTER reported that one week after the removal of a cervix uteri by galvano-cautery, recently performed by Dr. Thomas for epithelioma, a very sudden and profuse hemorrhage occurred. It was controlled by the use of persulphate of iron. At the end of another week, a second hemorrhage occurred, much less profuse, and it was much more readily controlled. A third, but slight hemorrhage occurred, and careful examination revealed the existence of two small spots from which the blood came. They were touched with nitric acid by Dr. Thomas, and no trouble had arisen since.

DRS. WARD and MANN each reported one case and DR. NOEGGERATH two cases in which secondary hemorrhage occurred after the same operation.

DR. THOMAS remarked that the occurrence of hemorrhage after the use of the galvano-cautery was a question of great importance. In the case reported by Dr. Hunter, he was to have operated a short distance out of town, but finally the patient was persuaded to enter his service at the Woman's Hospital. It was altogether probable that, had she been operated upon at the distance first contemplated, the hemorrhage would have proved fatal. When the operation was performed, the wire was sent through the tissues very slowly, there was no blood visible after the operation was completed; the woman in every respect did well up to the end of the first week, when a hemorrhage occurred which doubtless would have proved fatal had not the patient been in a hospital.

The fact that five cases of dangerous secondary hemorrhage, within the knowledge of the members present, had occurred after the use of the galvano-cautery should be announced.

DR. NOEGGERATH remarked, that the occurrence of hemorrhage

secondary to the use of the galvano-cautery, has another important bearing. There was a tendency to again treat the ovarian pedicle with the cautery, and then allow it to drop into the abdominal cavity. It was an important consideration, therefore, that, long after the operation had been completed, hemorrhage might occur.

The occurrence of these secondary hemorrhages might be explained in two ways:

(1) That the plug in the blood-vessels differs in character from that formed when other means of arresting hemorrhage are resorted to; or,

(2) That the plug is shorter than that ordinarily formed.

The latter was regarded as the more plausible explanation. It is well-known that the radiating heat from the electro-cautery, even when a large wire was used, is very slight.

REPEATED RUPTURE OF AN OVARIAN CYST; OVARIOTOMY; RECOVERY.

DR. THOMAS related a case as follows:

Eighteen months ago, a lady, who had been under the care of Spencer Wells, consulted him regarding a pain in the back and extending down the thighs, and other ordinary symptoms of ovarian trouble. Upon examination, she was found to have retroversion of the uterus, and one of the ovaries was about as large as a small hen's egg. The patient was extremely irritable; but little treatment was adopted. She passed into Dr. Walker's hands for treatment of other difficulties than those just mentioned. About five months ago, she noticed that her abdomen was getting quite large. Examination disclosed the existence of an ovarian tumor, which at that time was estimated to weigh fifteen or twenty pounds. About one month ago, Dr. Walker was sent for in great haste, and when he arrived found the lady in an almost complete state of collapse. Her agony was most intense on account of abdominal pain, and it was thought that she could not live through the night. Morphia was used hypodermically, in very large quantity, and the patient was carried through the night. Upon examination of the abdomen it was quite evident what the cause of the alarming condition was, for the tumor had entirely disappeared, and the peritoneal cavity was filled with fluid. There was a moderate attack of peritonitis produced, but at the end of two weeks recovery was complete. She went on very well until at the end of the succeeding two weeks, when she had another attack similar to the one from which she had just recovered, but not so severe in character. The tumor had refilled, and evidently had ruptured again. The patient was excessively nervous, and she was running down very rapidly.

On Friday last, Dr. Walker was sent for in great haste the third time. When he arrived, it was found that the cyst appar-

ently had not ruptured, but at a later period in the day, it emptied itself for the third time into the abdominal cavity. As the cyst had broken three times, it was supposed that its wall was very thin.

At three o'clock on Friday, Dr. Thomas operated for its removal. When an incision was made through the walls of the abdomen, it was found that the peritoneal cavity was filled with fluid. The cyst was almost entirely emptied. Dr. Thomas was much astonished to find that the cyst-wall was very thick, and that it contained an opening no larger than a knitting needle, through which the fluid had passed. The cyst was removed, a clamp applied to its pedicle, and a drainage tube introduced.

The cyst was submitted to microscopical examination made by Dr. Seessel, who reported it an example of cystic adenoma.

There was in the cyst-wall a small round ulcer with ragged edges, which was caused by retrogressive metamorphosis.

The patient did well after the operation, and at the present time (Tuesday) is in a very favorable condition.

On Sunday, there was a sudden rise of temperature, but on Monday, the temperature had fallen to near the normal standard. The special point of interest in the case is the rupturing of a thick cyst-wall by a process of ulceration upon the inside. [Later report, case recovered.]

Stated Meeting, May 21, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

LAPAROTOMY FOR EXTRAUTERINE PREGNANCY OF TWENTY-TWO MONTHS' DURATION.

DR. T. G. THOMAS related the history of a case as follows:

A woman in fair health and the mother of two children, became pregnant twenty-two months ago. There was nothing unusual with reference to her utero-gestation. At the end of the ninth month, she was taken with labor pains which were severe but ineffectual. A midwife, who was in attendance, found the os to be very small and the pain severe, and suspecting something was wrong, sent for a physician. The physician who was summoned declared that the woman was not in labor.

The supposed labor pains had ceased, the os was closed, and the child which was supposed to be alive had ceased all movements.

The health of the woman immediately began to depreciate, not rapidly, but steadily, and at the end of the twenty-second month of pregnancy, she was in the following condition:

She was unable to walk, even across her room, without assistance. Her pulse was exceedingly rapid, usually as high as 140

after making a slight effort, and was very feeble. Her countenance was anxious and distressed, there was marked gastric derangement, her tongue was red and glazed, and from the navel and the vagina there was a very fetid purulent discharge.

The source of the vaginal discharge was not made out; that is, no connection between the vagina and the debris of the extrauterine pregnancy was discovered. The uterus was pressed forwards, was high up in the pelvis, and measured three inches.

In that condition the woman was brought to the Woman's Hospital, where she came under the care of Dr. Fordyce Barker, who requested Dr. Thomas to operate. The question arose whether it was wiser to operate immediately or endeavor first to improve the patient's general condition. Some of the consultants favored the latter course; while others, and among them Dr. Thomas, recommended immediate operation. The liquor amnii had entirely disappeared, and the abdominal enlargement had the feel of a solid tumor. When the tumor was grasped between the hands and moved from side to side, a peculiar creaking, something like that of leather, was produced, and it was thought to be due to pressing the bones of the head together. The patient had been cared for in the most faithful manner, both by her physician and her friends, and yet her general condition had steadily depreciated. It was decided to operate immediately. The patient was placed under the influence of ether, and as soon as she was under the influence of the anesthetic, it was noticed that the pulse had disappeared entirely from the wrist. During the entire operation, the patient was pulseless at the wrist. This fact is mentioned to account for an item in the operation to be spoken of hereafter, and also to show her extreme debility.

Cutting down upon the abdominal tumor, a mass of fetal bones was reached, but the shape of the child was entirely lost. The bones were inclosed in a sac, and some of them were firmly imbedded in the sac-wall. The sac was washed out with thymol solution, and, in attempting to remove the bones entirely, it was torn, and a coil of intestine entered. When the bones were removed, the sac was about one-half filled with intestine. The only way in which this complication could have been avoided would have been to allow the bones to remain undisturbed, and await their removal by natural processes. Which was the wiser course, Dr. Thomas was unable to say.

The sac was then torn through completely to its base, and a drainage tube inserted in Douglas' pouch. It was thought by many of the gentlemen present at the operation, judging from the pulse, that the patient would die upon the table, but the pulse had been

so exceedingly feeble for three days prior to the operation that the mere fact of its disappearance from the wrist was not sufficient to bring Dr. Thomas to share the same opinion. After the operation, the patient was placed upon Kibbee's fever-cot, and wrapped in a blanket, which was then wet with cold water. Her temperature had been somewhat elevated and the cold affusion was instituted to guard against a higher elevation.

Free and thorough drainage was secured by turning the patient upon her side. The temperature throughout the case remained under 101° F., and a complete recovery was made.

It was the third case of abdominal pregnancy which had come under his care within two and a half years. In the first case, the peritoneal cavity was filled with purulent fluid; the child was retained thirteen months. The second case had been related to the Society, and was one in which the fluid had just commenced to be purulent when the operation was performed. The child was carried seventeen months, and the patient made a good recovery.

ANTE-MORTEM DECOMPOSITION OF THE ARMS DURING SEPTICEMIA
FOLLOWING ABORTION.

DR. E. G. JANEWAY, upon invitation, related the history of a case as follows:

A female patient, *æt.* 32 years, was admitted to Bellevue Hospital, April 16th, 1878. No family or personal history could be obtained. On April 10th, she had an abortion. It could not be ascertained whether the placenta came away or not.

On April 15th, she had a chill, and pain commenced in her arms. On the morning of April 16th, her left fore-arm and right upper arm began to swell, and the pain grew more intense. Dr. Janeway saw the patient on the 17th, when there existed marked swelling of the upper right arm and of the left fore-arm. The skin was tense, somewhat discolored and ecchymotic, only slightly edematous. There was distinct crepitus upon pressure, and percussion gave a well-marked tympanitic note, more marked on the right than on the left. The arms were swollen to two or three times their normal size. There was a fetid discharge from the vagina, and the os uteri was open. Her carotid pulse was very rapid and the temperature ranged from 102 to $104\frac{1}{2}^{\circ}$ F. It was suspected that the condition of the arms was due to thrombosis dependent upon ulcerative puerperal endocarditis, but no evidence of cardiac disease was found.

Free incisions were advised; they were made; gas escaped in fine jets, but the tension was not to any great extent relieved. Some fluid also escaped, which, being examined with the microscope, was

found to contain rod-shaped and round bacteria. No fresh blood followed the incisions.

Death occurred on April 18th, 1870, about three days after the attack commenced.

At autopsy, no obstruction was found, either of the arteries or veins supplying the upper extremities. The uterus was slightly enlarged, and its inner surface was gangrenous. The uterine sinuses were free, but contained a black grumous fluid. There was a slight exudation of lymph upon the external surface of the uterus, and also upon the coils of intestine with which it came in immediate contact. The ovaries were apparently healthy. The spleen had undergone decomposition, and gas escaped upon section. The liver was in a similar condition. The right ventricle of the heart contained gas. The lungs were normal.

Dr. Janeway thought that the death of the brachial tissues depended upon the condition of the uterus, and gave as an explanation that for some reason the septic material had been conveyed to the arms rather than to other parts of the body, and there gave rise to decomposition and entire death of the parts.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, June 6, 1878.

Vice President, LEWIS D. HARLOW, M.D., in the Chair.

DR. RICHARD A. CLEEMAN read the following history of a case of

DEATH FOLLOWING THE SPONTANEOUS RUPTURE OF AN OVARIAN CYST.

"I have before me an ovarian cyst, not large, but the rupture of which was the determining cause of death in a patient under my care in the wards of St. Mary's Hospital.

From notes kindly furnished me by the resident physician. Dr. Martin Bonnefil, which I have supplemented from my own memory, I extract the following details of the history of the case.

Victoria U., German by birth, æt. 26 years, a married woman and mother of four children, was admitted into the Hospital May 8th, 1878. The patient was apathetic in demeanor, emaciated to the last degree, of bloodless and cachectic appearance. She com-

plained of extreme weakness and loss of appetite, symptoms which had lasted two years, having followed a miscarriage which terminated her last pregnancy; during all this period her debility had been such as to cause her to keep her bed.

On examination of the abdomen, a well-marked dark line was observed extending from the pubes to the umbilicus; a pigmentation developed also, as a comparison showed, in the mammary areolæ. The lower part of the abdomen was fuller than normal and dull on percussion, especially on the right side; the enlargement dating, according to the patient, like the debility, from the miscarriage; it had never given her any inconvenience.

The history, the shape of the mass, and other circumstances, notwithstanding the presumption from the pigmentation, negatived pregnancy; and the existence of an ovarian tumor, in the beginning of the 'second stage' of development, was conjectured; it was considered, however, inexpedient, at this time, to make a vaginal examination to confirm the diagnosis. The treatment was directed to the general condition of the patient; she was put on a supporting regimen, tonics, etc., prescribed. She remained without marked change till May 17th, nine days after her admission into the Hospital, when she was found in a state of complete collapse; from this condition she scarcely rallied, death taking place on the third day following (May 20th). Rupture of the supposed cyst was surmised and verified by the autopsy, made a few hours after death by Dr. Bonnefil, assisted by the house surgeon, Dr. I. H. Ewing. They found about a pint of dark-colored, extremely offensive pus in the pelvic cavity and a cyst of the left ovary, of about the size of the head of a mature fetus, from which, when compressed, a sanious pus was seen to issue through a small pin-hole orifice in its walls; the morbid mass was firmly adherent to the intestines above and to the bladder below. The muscles of the lower part of the abdomen on the right side were seen to have undergone a peculiar fibroid degeneration; they were much thickened, very dense, and whitish in color, cutting firmly under the knife. Their condition explained why the right side of the abdomen was more prominent than the left, under which lay the diseased ovary. The kidneys presented the gross appearance of fatty degeneration; the liver was not examined.

The cyst, with the upper part of the uterus, the right ovary and adjacent portions of the broad ligaments were cut away and constitute the specimen I now show you. It has been kept for more than two weeks in a strong alcoholic solution, which, in constringing it, has somewhat altered its appearance. The cyst, which is seen to be unilocular, was much larger when it was laid open, the

day after its removal from the body ; its walls were thicker, while their interior was beautifully marked by intersecting broad black lines, caused by the deposition of black particles (the disintegrated remains doubtless of a former hemorrhage), along the many folds which resulted from the cyst's collapse ; the fluid within was blackish in color from the suspension of similar particles, some of which may still be seen in the further recesses of the sac, whence the alcohol has not yet dislodged them. The walls would now be smooth, were they not studded over very thickly in some places with small club-shaped processes : and are seen, when held up before the light, to be of different grades of thickness, being in some places very thin : in two instances actual breaches of continuity, small apertures, are observed, one of which was the orifice through which the contents escaped to set up the fatal peritonitis ; the other, since it was not noticed at the time of the post-mortem examination, is, I think, the result of maceration, and the handling of the specimen upon a much thinned spot.

Rupture of an ovarian cyst is not a very common occurrence, and when it does happen, is not invariably fatal. Dr. Peaslee, in his work on Ovarian Tumors, treating of this accident, quotes Dr. Verneuil (*Gaz. Hebdom.*, No. 30, 1870) to the following effect : 'M. Nepven has collected a number of cases which joined, to those already reported by Dr. Tilt, of London, furnish a total of 97 cases. Out of this number, there were 46 deaths and 51 cures, more or less complete. Sometimes, though rarely, death was sudden ; on other occasions it was speedy, from subacute peritonitis ; most frequently it occurred at the end of a few days.'

In our case, the fatal termination was evidently due to peritonitis ; though, as far as the usual symptoms of this complication are concerned, the disease was latent, as I have seen before in inflammation of the peritoneum from rupture of a tuberculous intestine in advanced phthisis. Whether rupture of an ovarian cyst shall prove fatal or not, depends, of course, on the nature of the contents. It will be remembered that Dr. Nebinger lately related to this Society the history of a case where a cyst was ruptured by a fall, peritonitis did not follow, the fluid was absorbed, the tumor did not refill, and the patient was cured of her ovarian dropsy. Others have reported similar cases. It is thought that the fluid of unilocular cysts is, as a rule, bland and unirritating, when tapping has never been practised ; while the various contents of the polycystic growths have been shown to be extremely acrid, even corrosive to steel. Whatever the original quality of the fluid in our case, however, the suppuration within the cyst and the remains of the former hemorrhage were sufficient to give its contents the characters of an irritating poison.

I conceive, in the absence of a known determining cause of the rupture, the patient being, as recorded above, always confined to her bed, that the accident was due to, first, a thinning of the walls of the cyst from fatty degeneration, and second, their ulceration, as a natural consequence of the imprisoned pus."

DR. WM. GOODELL states that rupture of a cyst of the broad ligament might result in cure, the fluid was always bland and unirritating. In all cases of ruptured cysts, the result would depend upon the character of the contents.

EXTRAUTERINE PREGNATION—LAPAROTOMY—RECOVERY OF MOTHER—
FETUS MACERATED.

DR. ROBERT P. HARRIS exhibited a female fetus, which had been presented to the Mutter Museum by Dr. Walter F. Atlee, who removed it from the abdomen of a woman by laparotomy, on May 18th, 1878. The fetus is perfect in form, except that the left foot is clubbed, and weighed on removal four pounds two ounces. It was originally, in all probability, a left tubal pregnancy, and burst from the cyst in the tenth week, resulting in an attack of peritonitis which nearly proved fatal. The decidua came away in six weeks after conception, first motion of fetus felt near the anus at four and one-half months, and subsequently higher and higher towards the abdomen as pregnancy advanced. False labor occurred at the full period, with discharge of blood lasting six weeks. Fetus died at about eight and one-half months, or a little over. Shrinkage of the abdomen commenced after the death of the fetus, or two weeks before the false labor took place. Menses returned regularly after this, the last period closing on May 15th. Operation in linea alba, usual greenish-brown discharge from cyst, cyst-wall not adherent to abdominal parietes, and imperfect at the bottom, showing intruding intestine. Fetus transverse, with head to left groin and cuticle commencing to separate. Placenta and cyst left untouched. Woman made a good recovery and went home to Germantown in twenty-six days.

This is believed to be the only case of early removal of an extra-uterine fetus by laparotomy in this city. The child had been carried thirteen months, and suppuration had not commenced, although it probably would soon have done so.

DOUBLE MONSTER.

DR. WM. GOODELL exhibited photographs of a double monster united at the head, but with two complete bodies.

DR. JAMES B. WALKER related the histories of

TWO CASES OF PLEURISY IN INFANTS.

"There have lately occurred, in my wards in the Philadelphia Hospital, two cases of acute pleurisy, which were of considerable interest to me, and of which I will give a short verbal account. Pleurisy in the infant is not very easy to recognize, unless the amount of effusion be such as to compress the lung and bulge the intercostal spaces.

Case I. was a male child, nine months of age, born in the hospital. For several weeks he had suffered with a persistent, but not dangerous bronchitis, which had suddenly, a few days prior to its death, during a sudden change in the weather, become capillary, and when my attention was called to the child, pneumonia of the lobular form was ensuing. The child's breathing was short, rapid, and painful. Vocal fremitus over the left lung was markedly increased, especially at the sides and back. Percussion note was flat over the same area and more painful than is usually found in simple pneumonia. Auscultation revealed over the same region marked bronchial breathing and increased vocal resonance, with numerous metallic râles.

The diagnosis of lobular pneumonia was unhesitatingly made, and an unfavorable prognosis given. The latter proved entirely correct, as the patient rapidly sank and died. At the autopsy, considerable was my surprise to find, on opening the left pleura, a small amount of a flaky serum escaping.

Further exploration revealed that the pleural surfaces of that side were quite firmly bound together with a recently-deposited plastic exudation. This material was so nearly solid that the pneumonic sounds had been transmitted through it with so little loss that its presence had escaped detection. The lung of that side was found in the condition diagnosed, the pleuritic complication having been overlooked.

On carefully reviewing all the aspects of the case, I concluded that there had been two symptoms present which should have attracted my attention to the complication. These were, the painful respiration shown by moaning expiration, peevishness when moved about, and wincing under light percussion.

Case II. presented itself in a few days in the person of an infant twenty days old. At the first glance of the child, the character of its disease suggested itself. The respiration was much hurried; inspiration was followed by a pause, and almost every expiration was accompanied by a moan. When the position of the child was changed, the moan became a cry, and the deeper inspirations thus occasioned were suddenly checked as if by a "stitch in the side."

The expression about the eyes also indicated acute pain. Vocal fremitus was diminished in the affected side—the left as in Case I. Percussion was painful, and gave a flat sound. Auscultation revealed a feeble and distant bronchial respiration and no râles. There was a small space at the base of the thorax, near the spine, which elicited on auscultation and percussion almost normal sounds. The diagnosis of acute serous pleurisy was made, and the case watched with considerable interest.

The child sank, in spite of all efforts to sustain it.

At the autopsy the diagnosis was fully confirmed. The cause of the peculiar sounds found near the spine was the plastic character of the exudation, which had firmly attached the lung to the chest-wall at this point.

In uncomplicated cases of pleurisy, diagnosis is comparatively easy even in the very young child; but in complicated cases it may be difficult, as in Case I., and in such it may be well to bear in mind the pain which accompanies the dyspnea and the pain elicited on light percussion; and inasmuch as the friction sound is seldom heard in these cases, the above will be of considerable importance in the early stage.

Stated Meeting, August 1, 1878.

Vice-President, RICHARD A. CLEEMAN, M.D., in the Chair.

DR. R. G. CURTIN read the history of a case of

PULMONARY CONGESTION DURING LABOR FROM DOUBLE MITRAL DISEASE—RECOVERY.

“M. K., æt. 24. The patient, a small, frail, excitable, and anemic woman, was taken in her first labor during the night of June 4th. I was called in the morning, and then saw her for the first time. I found the head had descended into the hollow of the sacrum, in the first position of the vertex. After waiting an hour (the pains being not very effective) my attention was aroused by a rattling sound with every respiration; a sound that appeared quite suddenly, and increased rapidly. It struck me at once that this was the sound produced by pulmonary congestion. On examination, I found her lips livid, her hands and feet cold and blue, and a cold, clammy, sweat extending over the entire surface of her body. She was coughing and expectorating a great quantity of pinkish froth. Her brain was so clouded by the imperfect aëration of her blood that she was unable to realize her condition. I applied my ear over her heart, and found it laboring tumultuously; a faint murmur was heard over the mitral area. I immediately applied the forceps and delivered her. A turpen-

tine stupe was ordered over her chest, and spirits of ammonia was administered internally. A mustard foot-bath was applied. I also ordered tr. digitalis and alcoholic stimulants.

As soon as she was delivered, the symptoms became less marked. In twelve hours her lungs were quite free from congestion, and her circulation was quite normal. I could then detect the long murmur of double mitral disease. There was also a marked thrill at the apex, with a heaving impulse with increased area. The murmur became louder as the heart recovered its strength. Upon inquiry, I found that years before she had had articular rheumatism, followed by palpitation and dyspnea on slight exertion, she was easily exhausted, and had occasional hemoptysis.

I think that, if the condition of her lungs had remained undiscovered half an hour longer, she would have died. She made a good recovery."

DR. J. L. LUDLOW in similar cases had had recourse to bleeding and the internal use of digitalis.

DR. LUDLOW related the history of a recent case of excessive vomiting of pregnancy, in which creasote, bismuth, etc., with dilatation of the os uteri and cauterization of the cervix, had failed to relieve, and in which he was compelled finally to induce premature labor to save the patient's life.

DR. CURTIN related the history of a similar case, in which the only thing which gave any relief was a cup of coffee before rising, as recommended by the late Dr. Charles Meigs.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Reported by J. W. UNDERHILL, M.D., Secretary.

Stated Meeting, May 9, 1878.

The President, DR. J. J. QUINN, in the Chair.

DR. E. B. STEVENS communicated the following particulars of the

REDUCTION OF AN INVERTED UTERUS IN THE COW.

"About two weeks ago, I was requested to assist my neighbor, Dr. Tichenor, in a case of which I have made the following notes: His cow had calved the previous evening, and at night there appeared nothing unusual in her condition, when the doctor shut her up in the stable. The succeeding morning he found her with a completely inverted uterus; a portion of the membranes had become separated

and cast off, but a considerable remainder was still firmly adherent to the inverted surface of the uterus. Altogether it made a great unwieldy mass, weighing 25 to 30 pounds. After completing the separation of the membranes of the sac, we attempted reduction very much by the same method as is employed with the human mother in case of inverted womb. The cow was upon her feet, and owing to this and the unwieldy bulk which we had to manipulate, the process was awkward in the extreme. We supported the mass, however, well up towards the vulva, with a large piece of sacking, then by gradual manipulation, lifting, pressing with the fist at the fundus, gradually the organ began to return, and at the end of perhaps half an hour we had the uterus completely in its normal condition, very much apparently to the gratification of the patient, who was all through a patient indeed, moaning as if in great pain, but making no resistance scarcely to our efforts in her behalf. After the uterine body passed within the cow's abdomen, I followed it up, passing in my hand the whole length of my arm, so as to be sure that reversion was entirely accomplished. The cow did well: the next day she was out on the grass lot, and although somewhat lame and feeble, she proceeded regularly to convalescence. About 8 or 10 days after the operation, she discharged several pints of an offensive and grumous fluid. The doctor threw up an injection of a solution of carbolic acid, and there was no further discharge. After restoring the inverted uterus, we gave her a draught containing one ounce of fluid ext. of ergot.

In this case we had an excellent opportunity for studying the peculiar provision made in this animal to meet the work of a placenta. Dalton gives a very satisfactory description of the uterine structure of the cow at the time of full development of the calf (vide last edition, Reproduction, chap. xii.).

‘In the cow, the sheep, and the ruminating animals generally, the external membrane of the egg, besides being everywhere supplied with branching blood-vessels, presents scattered over its surface a large number of distinct rounded or oval spots, at each of which it is covered with thickly set, tufted, vascular prominences. These spots are called *cotyledons*, or cups, because each one is surrounded by a raised rim or fold, which embraces a corresponding rounded mass projecting from the internal surface of the uterus. This projecting portion of the uterine mucous membrane is also abundantly supplied with blood-vessels, and the tufted, vascular loops projecting from the surface of the fetal membrane dip down into its substance, and are entangled with those belonging to the uterus. There is no absolute adhesion between the two sets of vessels, but only an interlacement of their ramified extremities; and by careful manipulation

the fetal portion with its villousities may be extricated from the maternal portion without the laceration of either.' Prof. Dalton's graphic description was verified in all respects in this case, giving us an unusually fine opportunity for inspection, at the very best time for examination. The masses of cotyledons patching the surface of the uterus had the appearance of pieces of red cauliflower."

DR. PALMER reported a case of

FATAL CARDIAC THROMBOSIS AND EMBOLIC PNEUMONIA, FOLLOWING DELIVERY.

Turning (podalic) was resorted to for shoulder presentation after a tedious labor.

Some 20-30 minutes after delivery of the placenta, and bandaging, the patient complained of feeling very weak. Going to her bedside, I found her pale, with feeble pulse, 100. Expecting the cause to be hemorrhage, I removed the bandage, and passed my hand into the vagina; found the uterus well contracted, and no hemorrhage. Her napkin was not unusually stained. Gave a stimulant of $\frac{5}{8}$ ss. brandy and carbonate of ammonia, grs. viii., every half hour. She revived in a few hours. On the next A.M., some 12 hours after delivery, she seemed in fair condition, pulse 85, temperature normal, no pain nor hemorrhage.

But that night (24 hours after delivery), I was summoned in haste to her bedside, to find a repetition of former symptoms in an aggravated form: frequent and feeble pulse, great dyspnea, cardiac oppression, and weakness. Again the free and frequent administration of carbonate of ammonia revived her but partially.

On the A.M. of the second day after delivery, pulse was 118, temperature 101° , breathing hurried, labored, skin cold, livid. That night, the temperature fell to 95° , pulse 120.

No essential change on third day, except that the temperature returned to 101° .

On the fourth day, there was an inception of cough, expectoration of muco-sanguineous sputa, increased dyspnea, and cardiac oppression, crepitation over lower two-thirds of left lung, dullness on percussion, temperature $105\frac{1}{4}^{\circ}$.

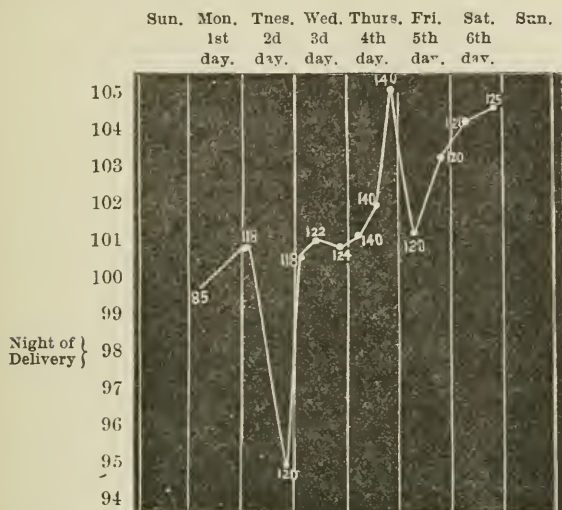
On the A.M. of fifth day, temperature fell to 101° after 10 gr. dose of quinine, rose to 103° in P.M., symptoms otherwise unchanged.

On the sixth day, all symptoms increased, temperature 104° A.M., 105° P.M. Died at end of sixth day.

Carbonate of ammonia was given freely throughout the whole period of sickness, also quinine (grs. x.), twice daily, whenever the temperature was elevated.

Was the first attack that of syncope? So it was at first supposed,

until there was a repetition of the same symptoms. It seems more probable that, from the first, the attack was that of cardiac thrombosis, and the relief obtained was the result of the free use of the diffusible stimulant, with perhaps the dislodgment of the clot from the region of the heart.



The second attack looked like the re-forming of a heart-clot.

The subsequent history pointed unmistakably to the lodgment of the clot (embolus) within the pulmonary vessels on the left side, and consequential inflammation of that lung (embolic pneumonia). It is well recognized now, the special danger that puerperal women encounter, to be attacked with thrombosis by virtue of their peculiar blood state, with its excess of fibrinogenous and watery elements.

DR. REAMY remarked that with the embolism there was probably septicemia as well as embolic pneumonia. This was indicated especially by the great variations of temperature.

DR. PALMER, in reply to Dr. Reamy, said that while septicemic symptoms may occur very soon after delivery, nay, are possible before, the history of the case, the cardiac and pulmonary symptoms, plainly pointed to those regions. There was nothing in the case which could not be explained in this way. There was an entire absence of any pelvic symptoms, and not the least offensiveness in the lochia. The sudden fall in temperature on the evening of the second day seemed to be owing to exhaustion; its rapid rise on the fourth, to the supervention of the pulmonary inflammation.

The speaker here referred to the marked benefits which accrue sometimes from the free administration of carbonate of ammonia in thrombosis and embolism, in different portions of the body.

Stated Meeting, June 13, 1878.

The President, DR. J. J. QUINN, in the Chair.

DR. UNDERHILL read the following notes of a

CASE OF MOLAR PREGNANCY; RETENTION OF THE MOLE FOR ONE YEAR.

"March 20th, 1878, was hastily summoned to see Mrs. W., reported to be flooding dangerously. Made visit immediately and found that danger had not been exaggerated. There was shown to me a substance about as large as the fist, which resembled a fleshy mole, and this I was informed had been a few hours before expelled from the uterus. Upon examination, I discovered that the womb had not contracted after expelling the body in question, but contraction was shortly induced and hemorrhage controlled by proper manipulations and the free use of ergot, aided by iced applications and the energetic administration of stimulants.

The following history was then obtained: Age 30, has had two children, youngest now $2\frac{1}{2}$ years old. Never miscarried. No history of syphilis. Last regular menstruation took place just a year ago, but there was a slight 'show' for a few hours three months later, and another about two months before the expulsion of the mole. After the fourth month from the cessation of the menses there has been constantly, up to the day I was summoned, a dark-yellowish discharge of a very bad odor. At times the discharge simulated ordinary leucorrhea. She had experienced nausea during several weeks immediately subsequent to the last appearance of menstruation, increased in size almost to the fourth month, and thinks she felt quickening at that period. From the fourth month her abdomen diminished in size, till it gradually attained almost its natural volume, after which it remained stationary. At first she had supposed herself pregnant, but abandoned that belief when the abdominal enlargement began to wane. Menstruation had been regular during the eighteen months which had elapsed from the time of weaning her last child.

Upon the morning of the day I was called, she was engaged in her household duties, when suddenly, to use her own expression, a 'queer' sensation was experienced, accompanied by nausea, giddiness, and tendency to syncope. Labor pains shortly began, and about twenty of them occurring in half an hour, the mole was expelled. No hemorrhage occurred until the pains began, and severe flooding did not take place till just after the expulsion of the body. It presented the usual appearances belonging to the carneous mole, but having been in alcohol till now (June 13th), it has shrunk much in size, and weighs at present but four ounces.

The time of the sojourn of this body within the uterus—one year—

is noteworthy, since it seldom happens that the fleshy mole is retained so long, although exceptionally cases happen in which it is retained even much longer.

Another circumstance worth recording relates to the fact that, although Mrs. W. had from the first establishment of the menstrual function suffered severely from dysmenorrhea, yet she has since the discharge of this degenerated product of conception menstruated without pain, though rather freely. She thinks it has effected a cure of painful menstruation in her case, and I am not sure but she may be correct in her supposition."

DR. PALMER thought that the specimen of Dr. Underhill was, without doubt, a blighted ovum, of the form known as carneous degeneration, for the following reasons: The history of the case, the stomach disorder, the menstrual suppression, etc., indicated the existence of pregnancy. These were followed by a continuous hemorrhage, the result of death, with retention and disintegration of the diseased ovum. Again, the appearance of the mass more nearly resembled that of a *mole* than a fibroid.

The hemorrhage from a fibroid does not follow a period of menstrual suppression, and shows itself first in the form of a *menorrhagia*—free and prolonged menstruation—usually considerably before there is a *metrorrhagia*.

DR. REAMY also thought there could be no doubt that the specimen exhibited was a blighted ovum, although it was rare that a body of the kind in question should be so long retained within the uterus. Still he had seen a case, not very long ago, where a carneous mole had been retained more than a year, and by careful examination a portion of the blighted ovum was ultimately discovered therein—a circumstance which set at rest any doubt that might have been entertained about the nature of the body.

DR. STEVENS reported a case illustrating the beneficial results to be derived from the use of

SULPHUROUS ACID AS A REMEDY IN PRURITUS VULVÆ.

There was severe pruritus of the labial surfaces, extending to the external genitals, with an erysipelatous rash covering these surfaces, and at the same time an abundant leucorrheal discharge. Age 46, and supposed herself approaching menopause. Leucorrhea of long standing, general health good. Inspection showed the rash covering the labia and flaming up over pubic region, eczematous and with a watery exudation. By the speculum it was shown that the rash occupied also the labial surfaces, extending up over the outlet of vagina. Superior portion of vagina and cervix healthy, but at the os was detected the red point of a small mucous polypus. The pedicle was grasped with slender forceps and the little body easily snipped off with curved scissors. The leucorrhea did not then altogether cease, as was expected.

The external parts were freely bathed with sulphurous acid in full strength. Prompt and satisfactory relief of the itching and burning was obtained. Several times there was a partial return of the pruritus, but always relieved, as at first, by the free application of the sulphurous acid.

Attention was first directed to this remedy in certain cutaneous affections by Dr. L. D. Bulkley's paper, read a year ago to the American Dermatological Association. The group to which he considered the remedy applicable is that class of eczematous affections having, in his opinion, a parasitic origin.

Some writers direct the acid to be diluted, but it is more efficacious applied in full strength. Keep closely corked, avoiding carefully atmospheric influence upon the contained acid. The parts should be very completely saturated whenever itching is felt. In all cases where pruritus vulvæ is eczematous, the sulphurous acid may be relied upon, if *pure*, properly kept, and thoroughly applied.

In reply to a question of Dr. Reamy, Dr. Stevens said that he did not think the pruritus was due to the polypus, because it continued to exist after the removal of the latter.

DR. REAMY had used, in eczema of the vulva, German green soap with gratifying results. But in some of the most obstinate cases of pruritus vulvæ that he had ever seen, the causative agency, leucorrhæal discharge, was *exceedingly* small. In one case, where a lady had suffered from this affection fifteen years, one in which all the usual remedies had been tried without benefit, he at once effected a permanent cure by dilating the cervical canal and painting it, up to the internal os, with strong solution of nitrate of silver.

DR. UNDERHILL had found nothing better, in that class of case where the itching depended on vaginal leucorrhæa, than irrigation of the vagina with a largely diluted solution of the compound liquor of iodine. For obvious reasons, it was not applicable to other cases. Also carbolic acid, as recommended by Schroeder, one part to sixty of water, he had found very serviceable—apparently curative even in some of the cases where the irritating leucorrhæa came from the uterus itself.

Stated Meeting, Sept. 12, 1878.

DR. THAD. A. REAMY *in the Chair.*

DR. A. J. MILES read a paper on

THE FORCEPS IN DIFFICULT BREECH DELIVERIES.¹

Stated Meeting, October 10, 1878.

The President, DR. J. J. QUINN, in the Chair.

DR. UNDERHILL reported a case of

¹ See ORIGINAL COMMUNICATIONS, this number.

HYDATIDIFORM MOLE.

"March 7th, 1878, was summoned to visit Mrs. Tillie H——. She was twenty-four years old, married four years, and the mother of two children. She was of scrofulous diathesis, of highly nervous temperament, and her family record was marked by several cases of pulmonary consumption. Menstruation had been established at an unusually early period. Had never miscarried, and sixteen months prior to my visit was her last accouchement. Her last catamenia had appeared 9th of December, 1877, and was normal as to length and amount. No return of the flow took place in January, and from that fact she concluded that she was enceinte, although her sensations, as she remarked, were different from those she had experienced in her other two pregnancies. February 14th, she was surprised by a reappearance of what she thought were her menses. At first, there was but a slight show, yet in a few days the flow became quite profuse. The sanguineous discharge continuing with varying degree of severity for eleven days, she then (February 25th) consulted an irregular practitioner, who, finding the abdomen enlarged, straightway informed her that she had a tumor, complicated by inflammation of the ovaries. Under his charge she remained ten days before I was summoned.

When I first saw her, she was pale, exsanguinated, and very despondent. I was shown a dark, liver-colored substance, twice as large as the last phalanges of three of my fingers, which I was told was the only thing, except blood, that had been passed. As it had escaped from the uterus the preceding day, it had therefore become dry and so altered that I could form no satisfactory opinion as to its character, although I suspected it to be a portion of the placenta. External examination at once convinced me that the uterus was too large to hold a fetus only three months old, which would have been her stage of pregnancy had it occurred just after her last menstruation. I was particularly struck by the peculiar, doughy, tense sensation, communicated to my hand when examining the body through the abdominal parietes. Upon passing the hand into the vagina I found blood in considerable quantity, but no clots. The os tincæ was tightly closed. Through the vaginal roof I also experienced the same tense, doughy sensation which had been imparted to the touch when examining externally. Still I was not satisfied as to diagnosis. I prescribed only the usual remedies for arresting uterine hemorrhage, which by the next day (March 8th) had completely arrested the flooding and pain. As

¹ This case is made the basis of a long article by Dr. Underhill, on the Hydatidiform Mole, in the *Obstetric Gazette* for January, 1879.

the bowels had not acted for several days, a saline cathartic was administered and the 'flooding prescription' omitted.

March 9th, was summoned early, and found that pains and severe flooding had occurred during the preceding night. Two or three fleshy-looking substances, each as large as half my hand, were shown me, resembling somewhat portions of the placenta, yet less vascular and of firmer consistence. Digital examination now found the os sufficiently dilated to admit the tip of the finger. Recognizing the impossibility of preventing the expulsion of the uterine contents, I therefore decided to hasten that event as rapidly as possible. The great loss of blood had already produced most serious results. Manual dilatation was resorted to; soon sufficient relaxation took place to admit two fingers freely, but no solid body could be detected. The cavity of the womb seemed to be full of clots, which quickly began to discharge, and, as they glided over my hand and wrist, imparted the sensation of copious flooding. Still I persisted in pushing the tips of the two fingers which had been inserted into the uterus, clear up to its fundus, and sweeping their extremities around the inner surface of the uterine walls, shortly experienced the satisfaction of finding the flow cease almost entirely. Withdrawing the hand, I scooped into a basin what I supposed at the time was mostly clotted blood. Upon examining the contents of the basin under the light, there was presented that beautiful appearance of the hydatidiform mole, so pertinently described by Dr. Gooch, who compared its constituent vesicles to a mass of 'white currants floating in red currant juice.' The whole amount discharged measured two quarts, besides the small portion lost by the nurse while changing the specimen from the basin to another vessel.

It required but a few minutes for the discharge of the entire mass. No vesicles were detected in the lochia, nor were any expelled during her tedious and difficult convalescence which extended over a period of *five months*.

As soon as the uterus was emptied of its contents, I gave my patient ergot freely. The temperature during the first five days ranged from 101° to 104°, and consequently I gave quinine in large doses at considerable intervals until subsidence of the fever, but after the lapse of a week flooding occurred, and notwithstanding the continuous and free use of ergot, the tamponade, and other means ordinarily employed to arrest uterine hemorrhage, it returned several times with alarming severity. During the five months of her illness there were administered more than four ounces of Squibb's solid extract of ergot, besides four ounces of the fluid extract. Her convalescence was made more tedious by intercurrent attacks of dysentery and pleurisy, the latter being particularly severe.

The local means which seemed best to control the uterine hemorrhage were the use of the laminaria tent, and this was resorted to at intervals when the patient's condition would admit of its employment.

Complete recovery was not established till the middle of August, and at the present date (October 10th) she is still in good health, and has no tendency to menorrhagia."

ABSTRACT OF THE TRANSACTIONS OF THE GERMAN GYNECOLOGICAL SOCIETY.

(SECTION XVIII. OF THE FIFTY-FIRST ANNUAL MEETING OF
GERMAN NATURALISTS AND PHYSICIANS.)

HELD IN CASSEL, SEPTEMBER 12TH AND 13TH, 1878.

Reported by H. FRITSCH, Professor of Obstetrics at Halle on the Saale.

First Session.

President, PROF. SCHWARTZ, of Göttingen; *Secretaries*, PROF. H. FRITSCH, of Halle, and DR. VEIT, of Berlin.

GERHARD LEOPOLD (Leipsic) read a paper on

THE KYPHOTIC AND SCOLIOTIC RACHITIC Pelves.

L. exhibited a number of excellent diagrams representing high grades of rachitic, scoliotic, and kyphotic pelves, and several specimens from the Leipsic museum, on which he based an extended paper on these varieties of pelvic deformity. The scoliosis does not alter the characteristics of rachitis, the promontory still points downwards and forwards; only because the body-weight strikes the pelvis asymmetrically, so also is the pelvic brim asymmetrical; thereby are developed high degrees of oblique pelvis, the narrow half of which is incapacitated for parturient purposes. If kyphosis, particularly of the lowest portion of the vertebral column, is super-added, funnel-shaped pelves are produced. Special reference was made to the elongation of the conjugate diameter and the constriction of the pelvic outlet as a consequence of kyphosis. In a number of pelves the kypho-scoliosis has produced most peculiar distortions of the pelvic brim. L. has delivered a number of women with such pelves, and purposes soon to publish his experience.

AUGUST MARTIN (Berlin) spoke on

THE TREATMENT OF CHRONIC METRITIS.

The speaker began by explaining the nature of the affection, viz.: an enlargement of the uterus by increase of the cellular tissue (the areolar hyperplasia of Thomas). This chronic hypertrophic infarction may arise either through disturbed puerperal involution or menstrual disorders, or after acute metritis, and is also often found associated with disease of the cervical mucous membrane. The intravaginal portion of the cervix is exposed to all manner of irritation, and therefore frequently becomes hypertrophied and not uncommonly ulcerated (a condition formerly called erosion), perhaps terminating finally in cancerous degeneration.

Considering these conditions, it is evident that the old local treatment by caustics, etc., applied to the surface, could not be beneficial. Scanzoni's statement, that chronic metritis is incurable, remained correct so long as only the mucosa of the uterus was subjected to treatment. Braun, however, claimed that a uterus, after amputation of its cervix, grows shorter, not only to the extent of the amputated portion, but that a general involution ensues, similar to that physiologically occurring post-partum. Martin's observations confirm this view. He operated in seventy-two cases, in nine of which the cervical surface was so changed as to give the clinical picture of carcinoma. The piece removed measured 2-4 cm.; all the patients but seven made a good recovery; of these seven, several had secondary hemorrhage, several pelvic cellulitis, and one died of intercurrent typhoid fever. After convalescence, the length of the uterus was found to have diminished 2-3 cm. more than the length of the piece removed; the walls, likewise, became thinner and more normal in consistency, the hard indurated uteri

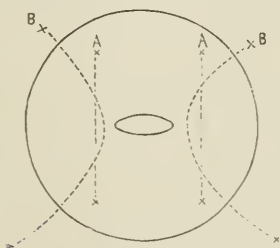


FIG. 1.

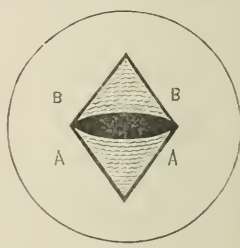


FIG. 2.

became softer, and the large, soft, infiltrated organs firmer. The subjective symptoms disappeared. As regards conception, no definite result can as yet be given, as many of the cases were operated upon only recently. The main benefit, and a certain one, too, was the rapid involution of the uterus. The operation is best performed with the knife, because with it the amount to be removed can most easily be decided. Hemorrhage is arrested by sutures,

or eventually drawing the mucous membrane over the stump. Martin's method differs from those generally employed. He first introduces a suture (Fig. 1, A) into the denuded surface at both sides of the os, and unites the deepest portion of the wound; then the needle B is passed through in the direction of the dotted lines, and thereby each lip of the cervix formed.

PROF. KEHRER (Giessen) likewise thought amputation preferable to cauterization and other superficial agents. He excises a pyramidal wedge from each lip, with the apex above and the base at each side of the transverse os, as seen in the diagram (Fig. 2); B and B and A and A are then approximated by sutures, and an elongation of the cervix in a sagittal direction produced. This method is very simple and devoid of danger; the passage of the sutures is easy. The results were the same as those of Martin; the uterine cavity diminished in length, the symptoms decreased. But the final results should be free from illusion. The uterus will diminish in size, but may again enlarge, and the old condition return—if the patient exposes herself to the same injurious influences as before. Indeed, if the patient does not exercise proper care, in a few weeks the uterus again becomes hyperplastic. A great part of the result must doubtless be ascribed to the rest and care incidental to the operation; but amputation certainly gives better results than any other method of treatment.

PROF. SCHROEDER (Berlin) considered the operation particularly beneficial and important in extensive disease of the mucous membrane, to which part his method is therefore especially directed. If no ectropion, no lateral lacerations exist, the cervix is divided on each side by a deep incision, and the lips are everted with double tenacula. S. then with a pointed double-edged knife removes all the mucous membrane up to the internal os, going deep into the parenchyma of the cervix. The remainder of the cervix is then doubled into the canal, and attached by sutures in such a manner as to clothe the whole new cervical canal with the vaginal mucous membrane covering the original cervix. The deeper the paring went, the more tissue was removed, the easier is this union. Secondary hemorrhage does not occur. The endocervical mucosa, the part always prone to recurrence of disease, is removed, and the result is the same as after amputation.

PROF. OLSHAUSEN (Halle) remarked that the shrinkage of the uterus after the operation was undeniable, but he doubted the amount claimed by the previous speakers; for the exsanguinated amputated piece appears much smaller than before removal, 4 cm. having, perhaps, been removed, and the piece measuring only 2 cm. He agreed with Kehrer in attributing much of the benefit to the repose of the patient in bed after the operation.

KEHRER did not believe that self-deception was possible if the length of the uterine cavity was measured with the sound before and after the operation; any diminution in length must then be real.

KUGELMANN (Hanover) thought Dr. Martin had performed the

operation rather too readily; of course, the results must be good if all the cases, light and severe, are operated upon. He assured the Society that he was in the habit of curing many such conditions in a much less dangerous manner, but his method requires much time and patience. He believed the dragging down of the uterus during the operation to be very hazardous, for generally the adnexa of the uterus are affected during chronic metritis, and their straining might readily increase their latent inflammatory condition, or lead to the dangerous acute stage. If a cervical discharge occurs after the operation, the latter certainly was not called for.

MARTIN answered that he had operated neither for the discharge nor the endocervical catarrh, but for the hypertrophy of the whole uterus, for the chronic metritis. It was evident that after Kehrer's operation the discharge might return, for K. excises only a portion of the endocervical mucosa, leaving a strip on each side. In his (Martin's) method, the whole mucosa is removed, which, however, would not prevent the inception of a new catarrh if new irritation occurred. He protested against the supposition of having too readily or carelessly performed the operation; in fact, it was a pity that the words "operation," "amputation" had been used in this connection, for in easy cases ten to twelve minutes sufficed to conclude the procedure, which then was too slight to be dignified as an "operation." As regards the danger of straining the diseased appendages of the uterus, in such cases the uterus could be left *in situ*, for it was by no means always necessary to drag it down to facilitate the operation. With reference to the recurrence of the affection spoken of by Kugelmann, it probably took place much more frequently after Kugelmann's than after his treatment.

KEHRER said that he always removes the lateral strips of mucosa if the latter is diseased. Martin might also have diseased mucous membrane above the point of amputation, for frequently the mucosa of the whole uterus is pathological.

SCHROEDER particularly prefers amputation when the mucous membrane is affected, because hemorrhage and discharge then especially call for active interference; besides, cancerous degeneration has been shown generally to begin in this tissue, which should therefore be removed if diseased. Under antiseptic precautions, pelvic cellulitis and peritonitis are not liable to occur; secondary hemorrhage is avoided by careful stitching. Schroeder lost but one patient, of tetanus. Kugelmann had required time and patience; but the patient, as well as the physician, needed time and patience, and she certainly would be better served by being freed of her trouble in a couple of weeks by an entirely safe procedure than by endeavoring, through months of treatment, to attain a result in no wise secure against a return of the disease.

PROF. FRITSCH (Halle) presented an

OBLIQUE PELVIS

from an epileptic nullipara, who died in her 18th year, of phthisis. Probably through an injury in early youth, the right wing of the

sacrum was detached from the body of the bone, dislocated backwards until arrested by the condyloid process, and then became ankylosed. The sacrum thereby lost the support of the ilium—sank to the right and was compressed. The slight dextral scoliosis thus induced is already fully compensated for in the fourth and fifth lumbar vertebræ.

PROF. P. MUELLER (Berne) spoke on

THE USE OF PILOCARPIN IN OBSTETRICS.

The proposals to use pilocarpin as an excitor of premature labor led him to test the agent. It certainly would be a great advantage if premature labor could be induced by internal remedies. All the dangers from traumatism and infection would be absent, and the objections which now exist against ergot might be found wanting in the new agent. But his experiments were not encouraging. To test the contraction-exciting power of pilocarpin, Müller gave it to puerperal women, whose uteri are particularly susceptible to such excitants. Multiparæ with flaccid abdominal parietes and large, readily palpable uteri were chosen, and both ergotin and pilocarpin given them. The results were presented in curve-tables, and showed that pilocarpin does not act as powerfully as ergot, for if the observations are continued through several days, after two days the pilocarpin loses its effect. In three cases of narrow pelvis and one of albuminuria, the efforts to induce premature labor with the latter agent were alike ineffectual.

SAENGER (Leipsic) likewise reported his experiments on

THE INFLUENCE OF PILOCARPIN ON THE UTERINE FIBRE.

He made use of women in labor and arrived at the following results: Pilocarpin paralyses the vascular centres, thereby arterial congestion is produced; this is proved by the premature occurrence of menstruation and the inception of ecbotic activity in the uterus after the administration of pilocarpin. The genitalia become softer, more moist; and diarrhea sets in. Atropin acts as an antidote, arresting the pains following pilocarpin. Collapsus was not observed in consequence of pilocarpin, which seems well borne by parturient women. S. administered 0.04 grammes ($\frac{1}{11}$ grain). The fetal heart-sounds first increase in frequency and then decrease. Ergot produces spasmodic, pilocarpin, rhythmical contractions of the uterus. Pilocarpin therefore has a "qualified ecbotic influence." If a "tendency to expulsion" be already present, as, for instance, pathological relations between uterus and ovum, then pilocarpin is an ecbotic. Practically, therefore, it would be advantageous when a labor has already imperceptibly begun. During labor proper, it

regulates and stimulates uterine activity, as was witnessed by S. in two cases.

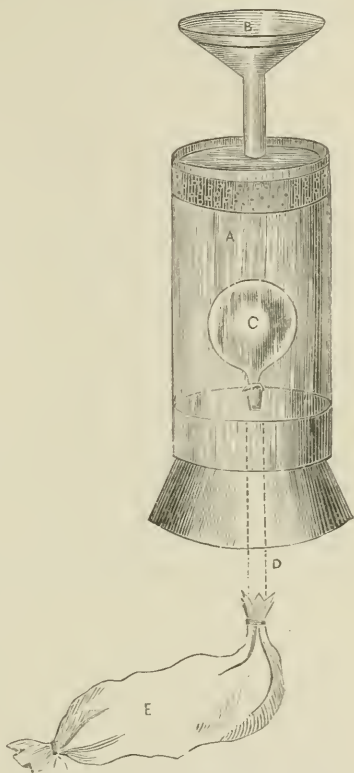
PROF. KEHRER (Giessen) read a paper on

THE CAUSES OF THE VARIATIONS OF THE FETAL PULSE DURING
UTERINE CONTRACTIONS.

It is well known that the fetal pulse diminishes in frequency toward the acme of a pain, and again rises during the interval. Schwartz endeavored to explain this phenomenon by an increase of intracardiac pressure; Schultze assumed that the uterine contraction compresses the placenta, thereby interfering with the oxygen supply to the fetus, producing a slight degree of asphyxia, and depressing the fetal pulse. In opposition, Kehrер quoted the fact observed by Schwartz that, during deficient oxygenation, first, in consequence of the irritation of the respiratory centres, contractions of the diaphragm occur, and only secondarily retardation of the pulse. It could only be assumed, then, that fetuses, whose heart-sounds were found to be below the average, had previously respired, obviously a practical impossibility; therefore this theory is incorrect.

Again, the experiments proving a retardation of the pulse while breathing compressed air might be adduced in explanation. But the analogy is wrong, since the non-breathing fetus evidently presupposes totally different physiological conditions. If positive results are to be obtained, branchia-respiring animals must be used in the experiment, such as tadpoles and triton embryos. These animals exist under water as does the fetus in utero, they have lungs, but do not use them, since they derive their oxygen through the pendent villi of their gills, like the fetus from the villi of the placenta. Kehrер experimented with the embryos of tritons 2 cm. in length. The body of these embryos is so transparent that the heart can be seen to pulsate and its beats counted through a magnifying glass. The vessel with the embryo was filled with water, tightly corked and exposed to powerful hydraulic pressure (11 m.). The result was that with variations of pressure from 0 to 11 m., the frequency of the pulse remained unchanged. The temperature of course did not vary, for even very slight variations of temperature show their effect. In the uterine cavity the pressure by no means approaches this artificial degree, and it is therefore proved that the universal contents-pressure is unable to induce a retardation of the pulse. Therefore Kehrер proposed a fourth theory: Leyden found experimentally that cerebral compression always retards the pulse. Schwartz also had compressed the skull of apneic animals with his hand, and produced retardation of the pulse thereby. Cranial compression therefore does not act on the

respiratory centre, but only on the pneumogastric. After the division of this nerve, the retardation of the pulse is wanting, in spite of the most forcible cerebral compression. The question now is, Does the skull receive such pressure? K. constructed the apparatus shown in the cut. A is a cylinder of glass filled with water, and firmly closed above by a movable syringe-piston B, below by a cork perforated by a glass tube D. Attached to this tube is a balloon C within the cylinder, and a piece of intestine E outside. Both systems, not communicating with each other, are filled with water. If the piston B is pushed downwards, no change is observed in the system C D E, but as soon as the piston B changes the shape of E, that is, presses directly on the balloon, the intestine E expands and becomes tense. Thus an indirect pressure transmitted through water exerts no compression, whereas direct pressure compresses the fluid in C D E. Therefore, the general pressure of the fluid contents of the uterus above will not produce compression of the fetal skull, but when the uterus closely grasps the fetus, then an effect is produced on the brain and pneumogastric nerve.



PROF. LAHS (Marburg) thought the explanation identical with that of pressure through the fetal vertebral column, which theory he would decidedly oppose.

PROF. OLSHAUSEN (Halle) believed that the general contents-pressure can model, and therefore compress the skull. Besides, the experiments with tritons should hardly be unqualifiedly applied to the human fetus.

SCHWARTZ (Göttingen) remarked that all observers seemed to admit a mechanical irritation of the pneumogastric as a cause of the retardation. The nature of the mechanical irritation is the question still under discussion.

KEHRER considered the subject by no means settled; further investigations should be made. An appropriate material for obser-

vation is offered by those animals whose cranial bones are not syndesmatically joined, as in man. The cranial bones of the ruminants, for instance, are united by dents, and with them compression of the brain is out of question, and the retardation of the pulse must be wanting.

DR. RUGE (Berlin) read a paper on

THE ANATOMY OF VAGINITIS.

In order to avoid post-mortem changes, R. excised small pieces of mucous membrane from the living vagina, and examined them. In the normal vagina there are no glands. The epithelium is of the tessellated variety. In old women the papillæ are very small and flat. In colpitis granulosa there is no inflammation of certain papillæ, but larger spots lose their attenuated epithelium, and their papillæ also disappear. R. mentioned the frequency of vaginitis in old women, which accounts for the frequent occurrence of adhesions in advanced life.

VON HOFFMANN (Wiesbaden) remarked that the vaginal epithelium certainly was tessellated, but embryological researches showed that originally it was cylindrical, although not purely so, the cells being pear-shaped.

LEOPOLD (Leipzig) was also unable to find glands in the normal vagina. On the summit of the papillæ in granular vaginitis L. frequently saw a bare plot of capillaries.

Second Session.

VEIT (Berlin) showed a

SPECIMEN OF TRIPLE TORSION OF THE PEDICLE OF AN OVARIAN TUMOR.

Axis-torsion is common; V. saw it 13 times in 98 cases. Etiologically important are pregnancy, density, or rupture of the cyst. In the present case the tumor was removed during early peritonitis; the cyst was friable in consequence of beginning gangrene. Death in 32 hours.

OLSHAUSEN (Halle) did not consider the diagnosis of axial torsion very difficult. In one of his cases a small, very movable tumor was detected per rectum; immediately after, acute peritonitis supervened which was allowed to subside, and ovariectomy then performed. In this case, O. diagnosticated torsion of the pedicle as cause of the inflammation. If acute peritonitis occurs with small, firm, movable tumors, particularly dermoid, the idea of torsion is plausible.

PROF. BREISKY (Prague) thought that the fluid obtained by aspiration was of importance. One case was brought into his clinic in which the dyspnea caused by enormous abdominal distention called for tapping. This operation had never been performed before. A quantity of putrid pus was removed. Intestinal adhesions, perforation and communication between intestines and cyst were

thought of, but the subsequent operation revealed nothing but perforation of the cyst.

PROF. FREUND (Breslau) also thought that small solid tumors are predisposed to axial torsion, but believed that if the tumor were attached at one other spot besides the pedicle, the other spot being perhaps an omental adhesion, possibly of fetal origin, a pendulum motion would be given it whereby the chance of torsion must be materially increased.

VEIT saw two cases of torsion without any adhesions whatever.

OLSHAUSEN also found adhesions absent in the majority of his cases of torsion.

PROF. WINCKEL (Dresden) reported a case in which likewise the first tapping revealed putrid pus. It was a tumor with uncertain diagnosis, perhaps hematometra with uterus duplex. Pus might therefore be found without torsion, and a hitherto totally sacculated fluid can undergo septic decomposition.

MARTIN (Berlin) did not believe that the elastic omentum can offer a point of fixation for an ovarian tumor. He also reported a case refuting the assertion that a torsion can be diagnosed from the fluid removed by tapping.

FREUND persisted in his theory, and could not understand how a tumor suspended from the uterus could become twisted on its own axis.

FRITSCH (Halle) remarked that a prematurely dead fetus in utero, although not firmly attached, still turns on its axis and causes torsion of the umbilical cord.

RUNGE (Assistant Surgeon in Strassburg), spoke on

THE INFLUENCE OF THE DIMINUTION OF BLOOD-PRESSURE IN THE MOTHER ON THE LIFE OF THE FETUS.

The considerable depression of blood-pressure was produced by injecting dilute muriatic acid into the stomachs of the maternal animals. In consequence the maternal blood became deficient in alkalies, and the fetuses in utero died before their mothers. But as the fetal blood showed a normal proportion of alkalies, it could not be the poisoning by acid which killed them. An explanation of their rapid death was found in the regular existence of subpleural and subpericardial ecchymoses, a proof of premature respiration. In order to determine whether the diminished blood-pressure really was the cause of death of the fetuses, the cervical cord was divided, whereby a rapid depression of blood-pressure was produced, which was verified by a manometer introduced into the carotid artery. The uterus was then opened, and thirteen minutes after the completion of the experiment the young were found dead or deeply asphyxiated. The more rapid the division of the maternal medulla the more rapid also the fetal death. If the controlling experiment was made of irritating the peripheral end of the cervical medulla,

the blood-pressure at once rose to normality, and living young were then removed.

The practical importance of the fact that diminution of the maternal blood-pressure kills the fetus is obvious, for instance, in cases of valvular insufficiency of the heart. Particularly interesting however, would it be to know, whether some agents, such as chloroform, might so depress the blood-pressure as not to kill the mother, to be sure, but indirectly the fetus. This point also was experimentally demonstrated by Runge. If the blood-pressure was considerably diminished by chloroform, the young died, while the mothers, especially when artificial respiration was employed, remained alive. Proof is thereby furnished that prolonged anesthesia may kill the fetus without endangering the life of the mother. In support of the view that their death was caused by the same influence as after division of the cervical medulla and alkalization of the maternal blood, the fetuses after chloroform also showed subpleural and subpericardial ecchymoses. A plausible explanation might be this: The slight degree of arterial tension of the mother led to deficiency of oxygen in the fetal blood, then later to irritation of the respiratory centre and consequent premature respiration and ecchymosis. The results were the same when the falling of the blood-pressure was produced by carbonic acid with prevention of simultaneous deficiency of oxygen. Experiments with ether gave more favorable results in this respect, as it was found difficult to depress the blood-pressure by ether inhalation to such a degree as to injure the fetuses. Only when great quantities of ether were administered, and the anesthesia was greatly prolonged, did the fetus perish.

PROF. ZWEIFEL (Erlangen) read a paper on

THE PRINCIPLES OF TYING THE UMBILICAL CORD.

Basing on previous researches of his determining the amount of blood contained in the placenta (*Centralbl. für Gynäkologie*, 1, 1878), he concluded that by the usual practice of tying the cord after its pulsation has ceased, the child is deprived of a large quantity of blood, which might be saved for it if the ligation of the cord were somewhat postponed. This latter plan of late ligation was adopted in the clinic at Erlangen, the division of the cord being, whenever practicable, deferred until the expulsion of the placenta. The latter was then compressed with both hands and as much blood as possible squeezed out of it and the umbilical cord into the child. These placentæ were afterwards found to contain about 100 grammes less blood than those treated in the usual manner. This amount nearly

corresponds to the quantity of so-called reserve-blood, expressed by Schücking from placentaë.

L. Mayer, however, by similar experiments found (*Centralblatt für Gynäkologie*, 10, 1878) a much smaller difference, only 26 grammes. The observations were continued during the past summer by an assistant of Zweifel's in Erlangen, and the results were found to be, for early ligation and division, a placental blood-supply of 178.5 grammes, for late ligation a blood-supply of 97.5 gr., a difference, therefore, of 81 grammes. In consequence of these facts, Z. decidedly advises to postpone the ligation of the cord until after the expulsion of the placenta. The coagulation of the blood in the cord is not to be feared. As in the first series of cases examined, so also did this second series of children show less decrease in weight than occurs on an average during the first few weeks of extrauterine life.

HOFMEIER (Berlin) made researches on the same subject in Schroeder's Clinic (*Centralbl. f. Gyn.*, 18, 1878) and found an average increase in weight of the children into whose systems the placental blood had been pressed, of 63.6 grammes, over those treated by the old method. He also found, by careful and frequently repeated weighing, that the former lose about one per cent less of their body weight (a child of 3,300 grammes therefore loses 33 grammes less) than a child whose cord is cut as soon as it ceases pulsating; and that the former also average $\frac{1}{3}$ to $\frac{1}{2}$ day earlier in beginning to gain in weight. H. considered these advantages to be positive, and had been able to detect no injury from the new practice.

PROF. ZWEIFEL read a paper on

INTERNAL RESPIRATION IN THE BLOOD OF THE PLACENTA,

in which he explained the persistence for one or two hours of the bright-red color of the blood in the umbilical arteries after the late division of the cord by the non-absorption of the oxygen in the arterial blood by the coats of the vessels. The umbilical cord being entirely devoid of nerves, and there being no use for the oxygen in the substance of the cord itself, the usual diffusion of oxygen from the blood to the neighboring tissues does not take place, but the gas expends itself entirely on the constituents of the umbilical blood, and thus maintains its bright color long after that of the umbilical vein has become dark. That the latter vessel should contain dark blood is explained by the partial detachment of the placenta and the consequent failure of maternal oxygen, whereas the arterial blood receives bright blood from the aorta of the child, which (according to the new plan) had breathed vigorously before being detached from its mother. The retention of

oxygen by the umbilical arterial blood explains not only its bright color, but its remaining fluid in the cold cord for twenty-four hours and longer, coagulating only on being discharged. Any peculiarity of the fetal blood could certainly not explain these phenomena, for no such peculiarity, in distinction from adult blood, exists.

DELA CAMP (Hamburg) showed a

LARGE UTERINE FIBROID OF TEN POUNDS WEIGHT REMOVED SUCCESSFULLY BY PÉAN'S METHOD OF LAPAROTOMY.

PROF. SCHROEDER read a paper on

LAPARATOMY FOR UTERINE FIBROIDS.

He did not propose to discuss all the methods of performing this operation, for every operator probably had his own method, to a certain extent based on generally recognized principles; but he thought it important that all methods should be published, in order that one cardinal operation might be established. So far, the only method which could lay claim to system was that of Péan, according to which S. had operated on his first case with success. But that could impossibly be the method of the future. *The pedicle must be safely disposed of and the abdominal cavity completely closed.* This is an easy matter in subperitoneal pediculated fibroids. S. removed such a tumor of the size of an adult head during an ovariectomy, enucleating it from its dollar-sized bed in the fundus and uniting the peritoneum over the wound. So fortunate a situation, however, is rare. The next best condition is when the tumor is attached above, does not involve the broad ligaments and is not subperitoneal; then the intraperitoneal operation can be performed and the pedicle be well secured. If this is not the case, the certain arrest of hemorrhage must be combined with dropping the pedicle, *i. e.*, complete closure of the abdominal wound. S. operates as follows: At about the internal os a needle is passed through the uterus and a strong ligature applied. Formerly he employed wire, now only silk. The blood-supply to the body of the uterus being thus arrested, the exsanguinated myoma is removed in sections, about as we would cut a melon. Then the edges of the wound are united by very deep and by superficial sutures, which are dropped. To avoid oozing from the punctures of these sutures the constricting ligature at the os internum is retained. Mortification of the constricted portion is certainly not to be feared; pieces of such size do not mortify. Should decomposition occur, infection must have taken place. Schroeder has operated in this manner six times, and had five rapid recoveries, one death.

PROF. MUELLER (Berne) has extirpated the uterus four times,

twice for fibroids, and twice for sarcoma and carcinoma of the corpus uteri. In one of the two former cases, the organ was completely prolapsed and contained a fibroid of the size of a child's head, in the other it was partially prolapsed and contained two smaller fibroids. The uterine stump was fastened by an enlarged Spencer-Wells clamp in the lower angle of the abdominal wound, with the special view of relieving the prolapsus by a union of the stump to the wound. In both cases a good result was obtained.

WINCKEL (Dresden) has operated twice according to Péan, with fatal termination. The method of Péan of passing the needle through the pedicle has the disadvantage that the needle points in an oblique direction behind. In one case, the wire ligature caught on the right side, but slipped on the left, and a portion of the pedicle escaped, but was quickly secured. The tumor was removed and no hemorrhage ensued, but two hours later collapse came on, and death followed twenty-four hours without external hemorrhage. At the autopsy it was found that a small portion of the stump, containing an artery and a vein, had slipped out of the loop, and permitted the fatal internal hemorrhage. In the second case, the tumor was carefully pushed to one side by an assistant, when, before the knife had touched it, so profuse a hemorrhage broke out as to cause the death of the patient. It was found that the tumor was a uterine sarcoma of so friable a character that even the slight interference of rolling it to one side lacerated its connections, and caused the fatal hemorrhage. W. agreed with Schroeder as to the careful securing of the pedicle and the closure of the peritoneal cavity.

OLSHAUSEN assented to the above propositions. He had operated four times: twice for pediculated fibroid under very favorable circumstances, in the third case a small non-pediculated fibroid was incarcerated in Douglas' pouch, the fourth was a slightly pediculated tumor. Two of these cases died of embolism of the pulmonary artery. O. recommended the wedge-shaped excision, with preservation of the uterine canal; but had himself performed a species of enucleation.

FREUND (Breslau) did not approve of Péan's method. He had operated twice, with one recovery, and intended to adopt Schröder's plan in the future.

MARTIN (Berlin) had operated four times, all fatal; three of septicemia, one of hemorrhage. The first operation was according to Péan; in the others, rubber tubing was applied under Péan's instrument, and then the tumor excised in wedge-shaped pieces.

Third Session.

President, OLSHAUSEN; Secretaries, FRITSCH and VEIT.

KOOKS (Bonn) presented the specimen of an

ENTIRE UTERUS SUCCESSFULLY REMOVED FOR CANCER, WITH THREE OVARIES.

The speaker discussed the importance of removing the entire

cancerous uterus and gave a critical review of all authenticated and doubtful cases. The hemorrhage is the great danger, but it can be avoided by accurate knowledge of the uterine artery, which proceeds in an arch from the broad ligament to the uterus. The artery might at first be spared, and then some of its smaller branches injured; in cases of secondary hemorrhage, possibly only one of the latter, instead of the main artery, had been ligated, which would account for the inefficiency of the ligature. The uterine artery is best saved by preserving the peritoneum as much as possible. His case was that of a woman 32 years of age, with cancer of the cervix; there were *three* ovaries attached to the uterus. Recovery.

VEIT presented the specimens of three total extirpations of the uterus performed by Schroeder, and one uterus successfully removed by himself. In the latter case, the diagnosis of glandular cancer of the body of the uterus was made by the sharp curette and the microscope.

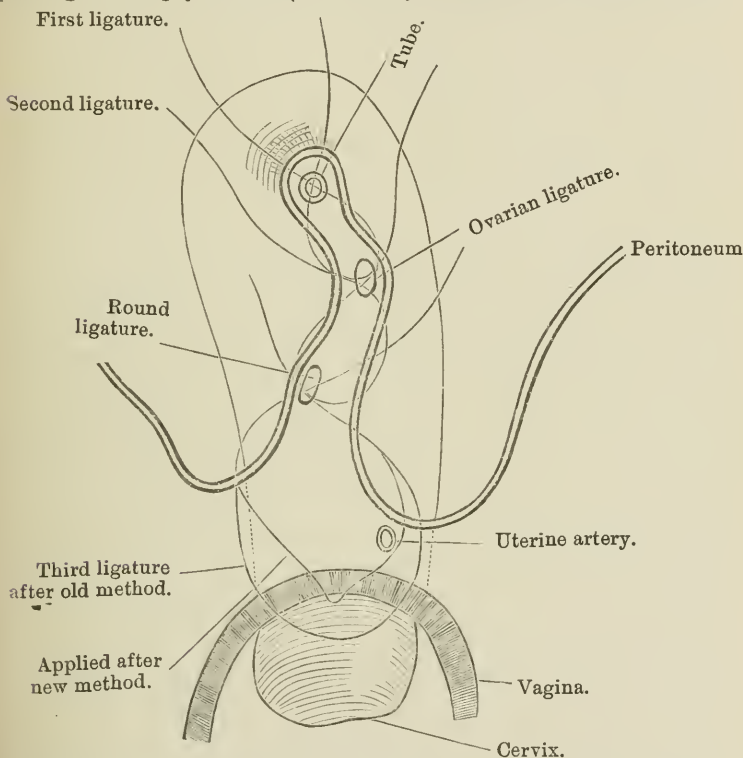
Prof. W. A. FREUND (Breslau) read a paper on his

METHOD OF COMPLETE REMOVAL OF THE UTERUS.

Hegar and Kaltenbach, in their work on Operative Gynecology, pronounced the chief desiderata in the operation of complete extirpation of the uterus to be the prevention of hemorrhage and the closure of the peritoneal defect. F. claims to have achieved these objects in his first extirpation performed in January, 1878, and reported in Volkmann's *Sammlung klin. Vorträge*, April 3d, 1878. (See this JOURNAL, July, 1878, p. 648.) To the modifications of this operation, described by him in the *Centralblatt für Gynäkologie*, June, 1878, he wishes still to add a few suggestions based on the ten operations now performed by him.

He extends the cutaneous incision down into the mons veneris, and if the recti muscles are very tense, performs partial or complete tenotomy; but he does not divide the peritoneum down to the symphysis. He unites the lower portion of both the free peritoneal borders with the corresponding lateral portion of the abdominal wound, thereby preventing the detachment of the anterior pelvic peritoneum, pressing the bladder against the symphysis and drawing the uterus forwards, without narrowing the lower angle of the wound. The uterus is steadied, if its corpus is firm, by a noose; if the corpus is softened by the cancerous infiltration, by a sort of polypus forceps, the fenestrated blades of which grasp without injuring, at the same time moderately exsanguinating the organ. He had seen the loop in a soft, degenerated uterus cut in even on light traction, and blood and cancerous particles escape into the peritoneal cavity. The ligation of the attachments of the broad ligaments is, naturally, the most important step of the operation.

F. had repeated opportunity to witness: 1st, the breaking of the thread (which had been frayed by the needle-eye while dragging it through the tissues) on tying the knot after the laborious task of introducing the ligature; 2d, the difficulty in properly constricting the tissues, on account of their elasticity; 3d, the persistence of hemorrhage from the uterine artery after excision of the uterus, in spite of the lower ligature. The first difficulty was surmounted by passing the empty needle (immovably attached to a handle) from



the vagina into the peritoneal cavity in front of the broad ligament, there attaching the thread, withdrawing the needle-point, and again introducing it behind the broad ligament. The second and third difficulties were overcome by including as little vaginal tissue as possible in the loop. The two punctures in each lateral fornix vaginae were made as near together as practicable, and the needles introduced in a strongly divergent direction. As the subsequently intended inversion of the margin of the wound is effected chiefly through strong traction per vaginam on the upper ligatures, which are not easily distinguished at the vulva from the others, F. attached tin rods 10 cm. long to the upper ligatures, and shorter rods to the lower

ones, by means of which the ligatures could also readily be passed through the vagina. Before excising the uterus, several silk loops are laid before and behind the projected peritoneal wounds, whereby the subsequent peritoneal suture is greatly facilitated.

The separation of the cervix from the vagina was several times found difficult, and, as happened in a case operated on in Breisky's clinic in Prague, small bits of cancerous fornix may be left behind; a division of one or the other lower ligatures also occasionally happened. To avoid this, F. has adopted the following plan: When the anterior fornix vaginae appears as a yellowish-red fold at the bottom of the wound between uterus and bladder, the fornix is perforated from the vagina by a guarded knife, and the opening enlarged to both sides. Then one or two fingers of the left hand are passed from above through the wound into the external os, and the vaginal portion gradually drawn upwards through the wound so as to expose the whole vaginal vault. The incision is now readily carried way around the cervix, and the ligatures are also easily avoided. The moderate torsion of the cervix during this manipulation serves to arrest any hemorrhage from smaller vessels divided at this time. If the cervix be too much enlarged for this manœuvre and the disease have spread to the adjacent tissues, this whole operation would in itself be contraindicated; if the disease is still confined to the uterus, previous amputation of the cervix should be performed. There is no danger of soiling the peritoneum from the open cancerous surface, if the precaution be taken to remove all loose ragged tissue before the operation, and to touch the wound with the actual cautery or a strong carbolic solution.

When the inversion of the borders of the wound in the broad ligaments has been produced by drawing on the upper ligatures only, the union of the two opposing peritoneal surfaces is effected by the aid of the previously introduced sutures, which are now passed also through the other peritoneal border, thus making a transverse linear cicatrix. The outermost sutures in the last four cases were passed through peritoneal borders and also through the envelope of the tubes and ovaries, or, if the latter were removed, only through the tubal envelope over the ovarian stump, in order to produce complete and certain closure of the peritoneal cavity. F. believes the inversion to be important, if only to supply to some extent the loss of solid intervening substance between bladder and rectum.

Of F.'s 10 cases, only 5 of which have been published, the others being about to be reported, 5 died of the following causes: 1 of peritonitis from erosive perforation of the sarcomatous iliac flexure; 1 of intussusception on the 12th day, cause unknown; because no autopsy; 1 of collapse from fatty heart and chronic

nephritis; 2 of septic peritonitis. All the cases of recovery have thus far remained well; the first case was examined by several gentlemen last July and found in perfect health; one other case showed a small, suspicious looking hard spot in the right vaginal vault which may prove a return and require operation.

F. particularly requested the Association to defer the consideration of the question of radical cure of cancer of the uterus by excision of the whole organ, until the technique of the operation had become more perfect, and its immediate results, at least, entitled it to be universally accepted. This once achieved, occasional returns of the disease would no more contraindicate the extirpation of the uterus than does the invariable recurrence of the affection militate against the removal of a cancerous breast, tongue, etc., which operations are performed daily and called for on sound surgical principles.¹

SCHROEDER said that he had performed Freund's operation (which name he desires to see retained) three times. It is by no means easy, but certainly feasible and justifiable. Carcinoma always presents an indication, and possible recurrence should not deter from its performance, for all surgeons remove cancers entirely regardless of their return. As regards the technique, S. in the main followed Freund. He also drew the intestines outside of the cavity, and divided the recti. Instead of the two upper ligatures of the broad ligament he used only one. In the treatment of the stump he differed somewhat, for he cut off the ligatures short, and then sewed the peritoneal surfaces together. Theoretically all suppuration is prevented thereby; still in two cases it occurred. The third case recovered without a symptom. Even though the disease should return five times out of six, S. would still operate. But the proper indications are important. Above all, cases of cancer of the body of the organ; then cases of endometrial cancer, spreading up from the cervical canal, and not as yet reaching the vaginal aspect of the cervix. In cases of cancer of the cervix spreading to the fornix vaginae, Freund's operation is often impracticable, as it does not admit of the removal of very much lateral tissue; there Schroeder proposes to open the whole fornix at a safe distance from the cancerous infiltration, and to excise the whole diseased cervix up to the internal os, together with the affected fornix. He calls this the "supravaginal excision," and has performed it several times.²

¹ An acquaintance with the technique of the original operation, as described in abstract in this JOURNAL, July, 1878, p. 648, is absolutely essential to the comprehension and appreciation of these supplementary remarks.—ED.

² In the *Zeitsch. für Geb. u. Gyn.*, Vol. III., Part 2, Berlin, Nov., 1878, S. describes this operation more in detail. He unites the vaginal and uterine surfaces by deep sutures passed up on one side of vagina and uterus to internal os and down on the other. Of five operations, four healed almost by first intention, one died of septic pelvic cellulitis. The cases are still too fresh to permit a conclusion as to the cure of the cancer.—ED.

MUELLER (Berne) likewise approved of Freund's operation. He had removed by laparotomy so much of the uterus as was diseased in one case of cancer of the body; a piece of the cervix was left, which acted as a diaphragm; the upper border of the wound was inverted into the external os. The ligatures had not come away after two months. In one case of sarcoma the uterine stump was fastened into the abdominal wound with the clamp and became attached there.

MARTIN (Berlin) had operated on two cases himself, and one with Dr. Langenbuch. In one case the eventration of the intestines was very difficult. M. therefore essayed a new incision on the dead subject, namely from antero-superior spine of the ilium on one side in a crescent-shaped line to the same spot on the other side, thereby making an apron which could be rolled upwards. This incision, however, proved impractical in the living subject, as too much muscular tissue was injured and too many vessels divided. M. removed the uterus by passing the knife perpendicularly towards the finger in the vagina and cutting all around the organ. Injury to the bladder is thus easily avoided. He followed Péan's plan of sitting between the legs of the patient during the operation, because the vagina is more accessible in that position. One case died of septicemia, the second of collapse; in the third, infiltrated retro-peritoneal glands were found.

OLSHAUSEN had done the operation twice; in the first case he injured the bladder or the ureter, for urine oozed from the vagina until 5-6 days after the operation, when it ceased entirely. He fears Freund's large forceps for the seizure of the uterus, and would prefer hemorrhage to the expression of cancerous particles into the circulation. He also removed the ovaries. In case one, the disease returned in five months; the second case died of secondary hemorrhage, and at the autopsy a cancerous kidney was found.

FREUND always removed the ovaries during the puberlic period; in older women he left them. He believes the inversion to be essential, and requested the Association not to modify his operation for the present, as the operation might fall into discredit by poor results. If his plan is carefully followed, the ureters cannot be injured.

If, however, the parametran tissues are infiltrated and thickened, accidents may occur, for it is then often impossible to distinguish between cancerous growth and simple inflammatory swelling; the ureter may be taken for a cicatrix. If the case has been seen before, mistakes may be avoided. The forceps are necessary, for in one case the loop cut into the uterus as into soft cheese.

SCHROEDER said that an injury to the bladder was easily avoided. The peritoneum is divided and the bladder detached from the uterus by the hand, aided, if necessary, by finger-nails and knife-handle. The vagina now being reached, it is opened. Indurations about the uterus may render the diagnosis very difficult and require the most subtle combined examination. Thus S. in one case felt an apparent infiltration of the posterior cul-de-sac, but the ovaries could not be felt. He therefore diagnosed ovarian dislocation and adhesion, and the operation showed one ovary attached and surrounded by perimetritic bands behind the uterus.

BAUMGÆRTNER (Baden-Baden) operated once, but too late. Funnel-shaped excision of the cervix had been performed, and the disease soon returned. Freund's operation was then performed; the right broad ligament was found so much infiltrated by the disease that it was impossible to control the hemorrhage by means of Freund's system of ligatures. Several artery forceps were left attached. In spite of drainage and irrigation with salicylic solution, the patient died on the fourth day, probably of septicemia.

PROF. DOHRN (Marburg) presented a number of

SPECIMENS OF HYMEN.

The hymen does not develop, as is frequently assumed, at the upper border of the urogenital sinus, but in the lowest segment of the urogenital tube. Up to the 16th week no trace of it is seen; its first indication being in the 19th week. He describes its formation as follows: The inner surface of the genital tube, at the middle of embryonic life, possesses considerable excess of tissue. This shows itself in the curve of the vagina, the elongation of the posterior wall, the growth of papillæ and rugæ. Farther on this hyperplasia extends to the tense external covering, and here leads to the formation of an apron-like fold which gradually grows in breadth. In accordance with its greater proliferation, the posterior vaginal wall plays the most prominent part in the formation of this fold.

VON HOFFMANN (Wiesbaden) formulated the conclusions of his still unfinished observations on embryos as follows:

1. The hymen should not be considered as a growth springing independently from the wall of the genital tube, but it is an accessory product to the formation of the vagina, the lower portion of which, touching at first the posterior (dorsal) surface of the allantois, gradually verges into the urogenital sinus, and then forms the floor of the vestibule, which is chiefly represented by the hymen.

2. Every hymen, in his opinion, originally possessed a double perforation, and probably the two openings are the former outlets of the Wolffian ducts in the urogenital sinus.

3. The formation of the urethra (which constitutes the upper segment of the floor of the urogenital sinus) and of the vagina is, therefore, in inverse proportion, in that the more capaciously the vagina is developed, the more narrow, relatively, does the urethra become.

4. The vagina, so far as now apparent, does not develop according to the view hitherto held, from the lower portion of Müller's ducts, but from the lower sections of the Wolffian ducts, and an intermediate layer of cellular tissue, or from the latter alone. All three organs coalesce, under normal conditions, to a single canal.

5. Into the upper blind end of this canal (the vagina), at a spot nearer to its anterior (ventral) wall, or into the ventral wall itself, do the two Müller's ducts united into the uterus open. The point of perforation becomes the external os.

6. He agrees with Kupfer (*Archiv für mikroskop. Anatomie*) that the ureters have nothing to do with the Wolfian canals, as is frequently claimed, but that they are independent, conical protrusions from the posterior wall of the vesical portion of the allantois.

DOHRN, although agreeing with many of Hoffmann's remarks, believes that the latter's constrictions and cell-accumulations were pathological. He had examined about eight hundred specimens, and made many sections, but had found it very difficult to procure good representations, and had discovered the mouths of Müller's ducts but once. One thing is certain, and that is, that the first traces of the hymen are protuberances of the posterior vaginal wall.

FREUND agreed with Dohrn, and mentioned Veit's statement that Gartner's ducts are identical with those of Wolff, and that the former may persist. There always is normally, about $\frac{3}{4}$ cm. above the meatus urinarius on the urinary protuberance, a shield-like, not to be mistaken spot, retracted like a cicatrix, absolutely without a fold, which is the place of exit of the Wolfian canals. This view was supported by a case reported by Freund of a vaginal cyst, in which an oblong tubelined with cylinder epithelium extended laterally from the vagina upwards, and opened at the shield-like spot of the vagina referred to.

BEIGEL (Vienna) always found in the body of the uterus, up to the seventh or eighth month, adjacent to the cavity, two ducts lined with cylinder epithelium. These he looked upon as the persisting Wolfian canals, and Kölliker confirmed his opinion.

SCHWARTZ (Göttingen) related a

CASE OF OVARIOTOMY IN A CHILD FOUR YEARS OF AGE. RECOVERY.

In a four-year-old child a rapidly growing ovarian tumor was found. Probably in consequence of the irritation exerted on the ovary by the tumor, precocious menstruation existed. The external genitals, although not hirsute, were thick, swollen, the uterus like that of a girl 20 years of age. The child was very feverish, much debilitated, the abdomen distended like a drum, circumference 83 cm., certainly enormous for a child; very tender; fluctuation indistinct. Tapping furnished only about 100 grammes of a not characteristic fluid. Ovariectomy according to Lister. The short, thick pedicle was tied in 3 portions and dropped. The tumor was a glandular cystoma, and weighed 4 kilogrammes (8 pounds). After the ovariectomy, the temperature fell. Unobstructed recovery. If the supposition is correct that the tumor produced the premature sexual development, menstruation should now cease; but as the case was operated on only last July, the interval is still too short to determine this point.

SCHWARTZ also spoke on

INVERSION OF THE UTERUS BY TUMORS.

He related two cases: 1, woman, 62 years, sterile. In her 50th

year, profuse, finally constant metrorrhagia. Since half a year, a prolapse of the whole inverted senile uterus was present. The cervix also was inverted, appearing only as a fine rim. This inversion was caused by a sessile myoma in the fundus uteri. The tumor was removed with the knife; the hemorrhage arrested by tampons. The uterus remained inverted, all efforts to replace it failing. But as the patient suffered no inconvenience from it, no further steps were taken. Spontaneous reinversion does not necessarily ensue, therefore, after the removal of the tumor; only when the latter is removed immediately after the occurrence of the inversion is the reduction likely to occur. This case shows the possibility of inversion of a virginal uterus. The excessive atrophy of the uterine walls at the seat of the tumor doubtless predisposed to the inversion, and leads to the query whether atrophy of the placental site is not frequently the cause of inversion.

2. Midwife, 49 years old; mother of four children; one miscarriage. In November, 1877, while lifting a weight, felt something give way in her abdomen. At the next menstrual period, profuse metrorrhagia. After various mistakes in diagnosis and treatment, S. saw her, and found several small fibroids in an inverted uterus. As the reduction of the inversion was doubtful even after the removal of the fibroid, it was decided to remove the whole organ. Three wire ligatures were passed through the cervix antero-posteriorly, twisted, and the uterus was removed. The ligatures were not drawn very tight, to prevent mortification, and three arteries spurted which were tied separately. The funnel itself was closed, besides, with three sutures. In spite of antiseptics, recovery was neither free from fever nor suppuration, but finally occurred after four weeks.

BREISKY (Prague) reported two cases of

OPERATION OF HEMATOMETRA FROM BROAD ATRESIA OF THE VAGINA.

1. Patient 15 years old, had diphtheria and typhoid in early youth, but no history of purulent vaginal discharge. The vagina ended blind in a shallow pouch. It was doubtful whether the atresia was congenital or acquired, probably the latter.

2. Patient 17 years; history also doubtful. Atresia 3-4 cm. long. In both cases, a small indented body like the original cervix could be felt per rectum. The dangers of operating were, the injury of adjacent organs, the rupture of a possibly existing hematoma of the tube, and septic infection. The incisions were free, the old cicatrices divided with the scissors, and then the supposed cervix reached by blunt division. A trocar-knife was passed into the uterus, then a canula introduced, consisting of two gutter-shaped tubes which together form a whole tube, which fitted exactly into the

tube inclosing the knife. Both gutters were united by crossed handles. This doubled canula was pushed over the trocar and the knife removed. The double canula could be used as a dilator. Through the latter again was passed a tightly fitting canula à *double courant*, furnished with a button below, which came to lie exactly in the former atresia, thus preventing too great stenosis during recovery. In both cases a normal cervix presented at the seat of the former atresia when the wound had healed.

WINKEL (Dresden) had operated twice ; the first time in January, 1873, on a girl 15 years of age, who still lives. The vagina was as thick and long as a laminaria tent. A catheter was passed into the bladder, the finger into the rectum, then a trocar passed upwards and besides the trocar a knife and then a catheter à *double courant*. W. advises early operation, before the dangerous complication of dilatation of the tube has occurred. In case 2, two tumors were distinctly felt, the hematometra and a hematosalpinx. The trocar was introduced and the blood evacuated without external pressure. Sudden collapse and death. At the autopsy a paper-walled tube was found burst, probably during vomiting.

SCHWARTZ preferred the old practice of a small opening and gradual evacuation of the bloody contents, for fear that their rapid discharge may render it impossible for the distended uterine walls to contract in proportion, and thus facilitate fresh hemorrhage and entrance of sepsis-producing air.

BREISKY believed that the distention and atrophy of the uterine walls referred to by Schwartz occur only in hydrometra ; in hematometra uterus and vagina both hypertrophy. He therefore persists in preferring a free opening.

HOFMEIER (Berlin) spoke on the

NEPHRITIS OF PREGNANCY.

The connection between nephritis and pregnancy is well known, but not explained. There are two varieties, acute and chronic. The former is generally favorable as to prognosis ; but for the chronic form the chances are generally bad : of 48 cases 18 died. In many cases the disease does not disappear after delivery. Only one-third of the pregnancies affected go to term. Formerly the expectant treatment was followed ; but this unfavorable prognosis seemed to indicate a possible improvement in the results by a premature termination of the pregnancy.

OLSHAUSEN remarked that only Bartels had satisfactorily pointed out the importance of nephritis complicating pregnancy. He agreed in general with Hofmeier.

MUELLER (Berne) exhibited drawings of new cases illustrating his formerly published views on

DILATATION OF THE CERVIX DURING PREGNANCY.

In the first two-thirds of pregnancy the cervix does not dilate,

but when it does dilate, labor has commenced, that is, pains have occurred.

SCHROEDER thought it settled that the cervical canal remains closed until labor; that the ring looked upon by Mueller as the limit of the cervix is really the internal os; that what Bandl calls "dilated upper cervical canal" is in reality the dilated lower segment of the uterus. The so-called ring of Bandl is the boundary between contracted uterine muscle above, and distended uterine segment below.

The Society adjourned to meet in Baden-Baden in September, 1879.

REVIEWS OF BOOKS.

TRAITÉ ÉLÉMENTAIRE DE CHIRURGIE GYNÉCOLOGIQUE, par le Docteur A. LEBLOND, Med. Adj. de Saint Lazare, etc. Avec 281 figures intercalées dans le texte. Paris: H. Lauwereyns, 1878, pp. 660.

ELEMENTARY TREATISE ON GYNÉCOLOGICAL SURGERY, by A. LEBLOND, M.D., etc., with 281 woodcuts.

Four years ago, Hegar and Kaltenbach in Germany published their work on "Operative Gynecology." In so doing they supplied a want universally felt in their native land, and now re-echoed by this elaborate production of one of the best known of the younger gynecologists of France. It is surprising that this country, the acknowledged home of modern gynecological surgery, should have allowed other nations to take the lead in this work. In saying this we do not forget Sims' "Uterine Surgery" which, however memorable its influence on gynecology may have been and actually was, can certainly not be considered as covering the whole ground of gynecological surgery. Perhaps the new edition which we hear Dr. Sims is now preparing, may have a wider scope. However that may be, we are convinced that we are but giving utterance to the wishes of the majority of the profession when we express the hope that ere long this omission will be rectified and the third and most complete work on the subject appear from the pen of some competent American gynecologist.

The author has divided his subject into three parts: 1st. Examination of the genital organs; 2d. Minor Surgery, and 3d. Operations.

In Part I., after some very appropriate general remarks on the manner of proposing and obtaining a local examination, the author enumerates the various instruments necessary to a complete gynecological case, exhibiting, as is customary with all writers, a natural preference for and acquaintance with those instruments with which he is most familiar, those invented by his own countrymen. Of spec-

ula, he prefers that of Bouveret, a modification of the well-known Cusco, but he accords all due praise to Sims' speculum, which he says "is indispensable in the operation of vesico-vaginal fistula and permits a digital examination while the cervix is being exposed to sight." The use of Sims' depressor seems, however, to have been misunderstood by the author, for he asserts that it is "destined to exercise a pressure on the posterior surface of the cervix in order to guide it into the lumen of the speculum in case the os points strongly backwards." Although he desires the same end, he could attain it more easily if he were to follow the inventor's directions and depress the anterior wall of the vagina. The cervix-scarificator recommended by L., a blunt-pointed knife shaped something like a gum-lancet, seems to us much inferior to the lance-shaped scarificator of Buttle, or the sharp and slender blade of an ordinary bistoury. It is a puncture of the deep-seated vessels or of the occluded Nabothian follicles which we wish to make, not a long shallow incision of the mucous membrane only, which is likely to increase the superficial induration by a cicatrix. Smith's lever pessary is described as being "improperly known in France under the name of Hodge," an elongated specimen of which latter instrument (known as Sims', we believe) is represented in the cut as Smith's. We think it important, in view of the great value and present almost exclusive use of Albert Smith's modification of Hodge's pessary in appropriate cases, that a correct representation of Smith's pessary be given in a future edition. A novel and, it would seem to us, after a careful digital examination, unnecessary manipulation for the purpose of determining the size of a pessary to be used in a given case, is the one described by the author, to pass one index finger to the end of the posterior cul-de-sac and press the nail of the other index against it at a point corresponding to the vulva; the distance thus measured off, minus one centimetre for the thickness of the symphysis pubis, being the length of the vagina. A pessary slightly shorter should then be chosen. By following the rule of always introducing a pessary in the left latero-prone decubitus after proper adaptation and after inspection of the dimensions of the air-distended vagina through Sims' speculum, we may generally assure a good fit, besides observing the not to be neglected precaution of applying the pessary to a uterus restored from its dislocation, which is not the case in the dorsal position.

From the liquid agents recommended for local use the author chooses but three—the perchloride of iron, tr. of iodine, and sol. nit. silver, $\frac{1}{3}$ or $\frac{1}{4}$ strength. It seems to us that the first and the last could better be omitted than carbolic and nitric acids. Pencils of tannin and iodoform are recommended for the uterine cavity, and tannin and bismuth powder for the vagina. A number of gynecological chairs are described and represented, but one by Gallard, resembling that designed by Dr. Chadwick of Boston (see last April number of this JOURNAL), seems to us the most practical, since it permits also the use of Sims' speculum. In this connection, we desire to express our sympathy with the nurse compelled to hold the speculum and the operator obliged to work on a patient in the posi-

tion represented later on page 82, as the left lateral decubitus for specular examination: the patient's buttocks are distant fully one-half the length of the table from the operator's end and midway on the table; the left leg is almost extended in a line with the back, instead of being equally flexed with the other. A more incorrect diagram of Sims' position we never saw. The illustration of Hunter's modification of Sims' speculum on page 72, taken from Thomas, should have taught the author better.

A chapter which is entirely new to us in gynecological works is that on illuminating apparatus, containing descriptions and diagrams of several contrivances for throwing reflected light on the vulva and into the vagina. The advantage of these apparatuses is obvious. The least expensive and most simple contrivance is a simple reflector perforated so as to allow of its being passed over the chimney of a lamp, which, like the well-known German student lamp, can be adjusted to the desired level.

The chapter on the Vaginal Touch contains, besides, very excellent and thorough directions on the technique of the manipulation and the detection of the various pelvic viscera, two useful diagrams illustrating the different relations of the pelvic organs with an empty and a full bladder, and a section on the touch in virgins. The author's statement that a digital examination in the erect posture of the patient is chiefly useful in cases of ascension of the uterus, as in young girls, tumors and pregnancy, seems to us one-sided. We have always employed the touch in that position for the contrary purpose of ascertaining the amount of displacement of the uterus when weighed down by the superincumbent abdominal viscera, and to control the support given to the uterus by a pessary when the woman is walking about. The possibility of detecting even a healthy ovary by combined abdomino-vaginal examination in a woman with thin and lax abdominal walls is mentioned. Six pages are devoted to the discussion of the rectal, vesico-rectal, and vesical touch. While the author permits the use of Noeggerath's vesical touch, in exceptional cases, he entirely proscribes Simon's rectal examination with the whole hand, which he styles a "barbarous method." In this absolute condemnation of a certainly dangerous, but in proper cases permissible and exceedingly useful procedure, probably only prejudiced minds will concur.

A very excellent chapter is that on Dilatation of the Cervical Canal by means of instruments, sponges, and other self-expanding substances, a subject generally passed over hastily in the text-books. The latest contributions to this topic by Sussdorff (*Med. Record*, July 14th, 1877) and Lyman (*Trans. Am. Gyn. Soc.*, Vol. II.) are quoted, but strangely the more important contribution to the treatment of distortions of the unimpregnated uterus contained in the latter volume, by Ellwood Wilson, is entirely ignored. We cannot help expressing our surprise in this connection at the total omission in the part on "Minor Surgery" of Forcible Dilatation of the Cervical Canal as a distinct method of treatment for dysmenorrhea and sterility dependent on stenosis of the canal and the severer degrees of flexion. A method so urgently recommended by Hewitt and

Ball, and more recently by Goodell, Wilson, Hanks, and Watts, and the excellent results of which (employed in a less violent manner) we ourselves have witnessed hundreds of times, certainly merits a separate description, and should not be passed over merely in less than half a page among the general indications for explorative dilatation.

A short chapter is devoted to the rather unnecessary measurement of the diameter of the cervix by means of the cervimeter of Dr. Chéron, a procedure claimed to be useful in determining the diminution of that part under treatment.

In the chapter on Vaginal Injections, Irrigation and Douches, we very properly find the position recommended to be that on the back, and the instrument, the irrigator, with straight nozzle. The author also speaks of the dangers occasionally resulting from the ordinary vaginal injections (which, in those cases, were really utero-peritoneal), and recommends the closure of the usual central aperture in the nozzle; he also speaks of cold injections as a stimulant in the indurated stage of "chronic metritis," in menorrhagia (for which latter he also recommends *hot* injections); of liquid and medicated injections—but nowhere in all the twenty-eight pages devoted to this subject, including six treating of Irrigation proper, does he refer to the methodical use of *long hot* vaginal baths in the treatment of chronic uterine engorgements and pelvic inflammation, as first employed and advocated by Emmet. In view of the evident thorough acquaintance of the author with American literature, this omission is surprising.

In the chapter on Local Depletion, among the accidents following leeching of the cervix, we miss mention of the production of severe general urticaria after each application, observed by Leopold of Leipzig (*Arch. f. Gyn.*, VII.).

Many excellent hints are contained in the chapters on Vulvar, Vaginal, and Uterine Applications, comprising the use of tampons, medicated or plain, suppositories, ointments, and liquids. Strange to say, the author still recommends and describes at length the tamponnade of the vagina for metrorrhagia through the old-fashioned speculum, evidently being unacquainted with the only absolutely thorough and safe method of plugging the vagina for hemorrhage by means of compressed flat pads of wet cotton applied and pressed tight with a forceps through Sims' speculum, until the whole vagina is firmly packed, precisely as a dentist fills a tooth with pellets of gold. The pads are removed through the speculum one by one, exactly as they were introduced. A vagina plugged in this way is positively impermeable to blood from the uterus, which cannot be claimed for the old tamponnade through a cylindrical or bivalve speculum.

The application of caustics (mild—iodine, perchloride of iron, solution of nitrate of silver, pyroligneous acid, crystallized acetic acid, sol. hydrate of chloral; strong—acid nitrate of mercury, alcoholic solution of the bichloride of mercury, conc. sol. of chromic acid, sulphuric, nitric, carbolic acid, sol. of antimony and zinc; powders—iodoform, tannin, iodide of potassium, alum; pencils

—nitrate of silver, iodoform, tannin, sulph. of zinc) is minutely described, and, as in all other chapters, the indications and contra-indications are clearly stated. The author especially recommends iodoform in superficial ulcerations and after more energetic cauterization, for its cicatrizing and anesthetic properties. He does not state, however, that a combination of iodoform with tannin, equal parts, almost wholly obviates the penetrating odor of the iodoform, while acting with even greater efficacy as a deodorizer and styptic. The actual cautery, preferably the new apparatus of Paquelin, is described at length, and recommended, after Courty and Siredey, particularly in the treatment of areolar hyperplasia; the earlier stage of infiltration, so-called, being treated by deep cauterizations every twelve to fifteen days; the later stage, that of induration, by superficial, stimulating cauterization every eight to ten days.

One of the most interesting chapters in this part of the book is that on Intrauterine Medication—a subject to which the author appears to have paid special attention. Contrary to the now universally accepted conviction of years, and the opinion based on experience of such men as Scanzoni, Barnes, Kammerer, Nott, Thomas, and many others, Leblond decides in favor of intrauterine injections, which he claims to be generally innocuous if performed in the manner minutely described by him. He uses an elastic catheter, 2–3½ millimetres in diameter (equal to 9 or 10 of Charrière's scale), which, he claims, will permit the escape of fluid by its side if the cervical canal has the normal width of 4 millimetres. In cases where the uterine canal is not distorted, a stiff tube, 2 millimetres in diameter, terminating in a small bulb with the opening at the end, may be employed, but ordinarily he prefers the soft catheter as less likely to injure the mucous membrane. This tube is attached to a syringe graduated like the common hypodermic syringe, and is introduced through the speculum until it touches the fundus, care being taken that the tube moves easily in the uterine canal. A preparatory injection of tepid water is made, the capacity of the cavity being estimated by watching the moment of exit of the fluid from the os, and then the injection continued for cleansing purposes. The syringe is then removed, filled with the medicated solution, and the latter slowly injected until it commences to flow out; so long as this happens, the injection may be continued without danger. A rest of several hours in bed is recommended, and if more than the usual moderate hypogastric burning is experienced, hot poultices with laudanum and an opiate may be ordered. The previous dilatation of the cervix recommended by Barnes, Schroeder, Spiegelberg, and the majority of other writers is considered entirely unnecessary by our author, and liable to cause the very inflammatory reaction which it is intended to avoid. The substances injected by the author were sol. nitrate of silver, $\frac{1}{4}$ strength; sol. perchloride of iron, 30°; sol. of iodoform in oil or glycerin, tinct. iodine. His conclusions are based on 30 injections in 7 cases, 3 of endometritis, 4 of metrorrhagia. In one case, 15 injections were made, chiefly of iodoform and glycerin; in another, 5; in two, 2; and in the other three, only 1 injection each. After 12 of these injections, an

immediate sensation of heat and more or less severe pain in the hypogastric region occurred, in 5 of which the pain lasted several hours; in 3 of these, inflammatory after-symptoms came on, which once resulted in ovaritis and once in pelvic cellulitis. No death occurred. In only one case, that of metrorrhagia after typhoid fever, is mention made of a cure following the injection. In consequence of the results, the author looks upon intrauterine injections performed after his method as entirely harmless, and considers such precautions as the syringe of Pajot, the openings of which are at the side and so arranged as to throw the fluid backwards, and previous dilatation, as quite to be dispensed with. Still he admits the possibility of forcing fluid through the Fallopian tubes.

A number of applicators, consisting of tubes of glass, rubber, or metal, through which saturated brushes are passed into the uterine cavity are described (Woodbury, Nonat, Barnes, Menières, which latter is furnished with a syringe from which the brush is saturated after its introduction). The ordinary flexible metal or rubber applicators in use with us are not mentioned, neither does the author refer to the intranterine applicator-syringe described by Lawson eleven years ago (*Med. Record*, 1867), and lately re-described by Lente (*Med. Record*, Dec. 29th, 1877), and which we devised independently and have used for the past two years with great satisfaction. We use Buttles' hard-rubber syringe, the nozzle of which is about 2" long, and so slender as to admit of its introduction into any not constricted uterine canal. It is perforated by a large number of holes. Lawson and Lente use a tube of flexible silver attached to an ordinary hypodermic syringe. The syringe is filled with the fluid to be injected, the nozzle wiped dry, and wrapped with a film of fine jewelers' cotton (the variety now sold as absorbent cotton), and introduced to the whole depth of the nozzle into the uterus. The piston is then slowly pushed down and the cotton film thus gradually saturated to excess, the fluid finally oozing from the os. That the cotton really is saturated and no fluid *injected* into the uterus can easily be proved by performing the experiment outside of the body. We have made this application hundreds of times with impure and pure carbolic acid, tinct. of iodine, iodized phenol (equal parts of tinct. iodine and pure carbolic acid), curing one case of membranous dysmenorrhea chiefly by this latter agent, and have even applied nitric acid to the endometrium with this instrument, and in no case have we seen an accident or more than slight temporary pain and burning follow the application. In three instances only, two of impure carbolic acid, one pure nitric acid, did a sensation of faintness lasting a few minutes follow the application. While we do not claim that this method is *absolutely* safe—and we do not think that strong acids and other chemicals, no matter how applied, can ever be considered *invariably* innocuous to the endometrium—still we are convinced that it is much safer than the injection, and quite as efficacious. It also can be used without previous preparation, and we have hardly ever found a cervix too narrow to admit the cotton wrapped nozzle, room for which in a given case is easily made by moderate dilatation with

Ellinger's dilator. Of course, the same contra-indications as stated by Leblond against injection hold good against this or any intra-uterine application (acute and even chronic periuterine inflammation), with the exception of flexion, which Leblond includes in the conditions forbidding injection. We have never hesitated to straighten the angle by drawing on the respective lip of the cervix with the tenaculum, or by dilating the canal and to make the application as usual, and have had no reason to look upon the application thus made as more dangerous than in a perfectly straight uterine canal.

The chapter on Intrauterine Medication closes with a consideration of medicated pencils, gelatine capsules, powders, ointments, and glyceroles. The author chiefly favors the introduction of iodoform in either of these forms, and claims to have achieved beneficial results with it in the milder forms of endometritis. The other astringents commonly used (sulph. zinc, nitrate of silver, tannin) he considers to be, if more powerful, also more dangerous, particularly in shape of pencils. He prefers nitric acid applied to the endometrium with the instrument of Woodbury, of Washington, to the stick of nitrate of silver left in the uterus. Pencils of tannin are credited with generally producing uterine colic, and occasionally pelvic-peritonitis and cellulitis. We have used them frequently, but do not recollect ever seeing any other than slight uterine pain follow. We quite agree with the author's recommendation of the iodoform pencils, but find that he has omitted to state what has repeatedly proved an objection to the use of the agent in our practice, viz.: the taste of the iodoform in the mouth, and the consequent impairment of the appetite following its rapid absorption, a very material objection in debilitated patients.

The remaining chapters of Part II. are on Parenchymatous Injections of the Cervix, Abdominal and Hypogastric Supporters, Pessaries, Restoration of the Uterus with the Sound, Catheterization of the Bladder. Dilatation of the Urethra, and Artificial Fecundation. The first and last-named subjects are rarely discussed in text-books, and probably still have a future before them. So far, however, but little can be said in their favor. Narcotic substances can be introduced as well subcutaneously; the intra-cervical injection of ergot in areolar hyperplasia has not yet been sufficiently tested, and as we ourselves have witnessed, is quite painful and followed by febrile reaction: and the injection of caustic fluids, while doubtless destroying the diseased tissue to some extent, is liable to be followed by hemorrhage, at least this was the result in a case of epithelioma of the cervix into which we injected five drops of a saturated solution of chloride of zinc: a large vessel was opened by the sloughing process, and the patient nearly died of hemorrhage.

The chapter on Artificial Fecundation describes the methods of Sims, Courty, Pajot, and Eustache. If practised according to Courty, by injecting the fresh semen obtained from a condom immediately after intercourse, it seems to us that the procedure would be less objectionable on esthetic grounds, and, therefore, more frequently adopted and more likely to be followed by success.

than when the less delicate methods of Sims and Pajot are pursued. The plan of Eustache, to instruct the husband immediately after intercourse to introduce his finger into the vagina, and to push the semen towards the os, at the same time drawing the cervix into the axis of the vagina, calls for a greater amount of anatomical knowledge and dexterity than most lay-husbands possess. We think the wife herself would generally be found a more apt pupil for this manœuvre. Artificial fecundation, if systematically pursued, seems to us to offer excellent chances of success, particularly if those cases are chosen in which the sterility seems to depend on some obstruction to the entrance of the semen into the uterus or on its non-retention in the vagina, and not on defective ovulation.

The chapter on pessaries contains nothing new; indeed, nearly all the pessaries represented which may be said to be of any practical value, are American instruments taken from Thomas' book (Cutter's, Thomas' so-called buckle anteversion, Albert Smith's, Fowler's, Hitchcock's). The French and other supporters appear merely as curiosities. The original Hodge pessary is represented, and the elongated Hodge again as the Smith, without the real distinguishing feature, the pointed sub-pubic extremity. Stem-pessaries are recommended by Leblond, when the difficulty is recognized to depend solely on the uterine distortion, and when all contra-indicating conditions (inflammatory tendency, acute or chronic) are surely absent. The neglect of these precautions accounts for the ill-results observed by the antagonists of these instruments. The stems of Eklund, of Stockholm, and Greenhalgh, are preferred, although the author seems to have had no personal experience with either. The introduction of vaginal pessaries in the left lateral decubitus, with or without Sims' speculum, seems unknown to the author.

The rapid dilatation of the urethra under ether is preferred by the author to the gradual process; Simon's and Noeggerath's methods are briefly described. We have devoted more space to this, the first half of the book, than the subjects treated therein would seem to demand; but we found so much of interest not mentioned in the text-books, so many practical directions and hints, and descriptions of minor technicalities which we have never seen published before, that we have almost come to look upon the first half of the book as more valuable to the incipient gynecologist than the second half with its accounts of the larger operations, the majority of which have been described either in the text-books or the journal literature of the various countries.

Part III., Operations, begins with General Considerations as to the period of operating, viz., as far as possible from the menstrual epoch; during pregnancy, if unpostponable (Spencer Wells, Verneuil), and at least two to four months subsequent to a confinement.

Chapter I. treats of the Operations on the Vulva and Perineum, comprising Abscess of the Vulvo-vaginal Gland, Injection of the Excretory Duct of the Vaginal Gland, Cysts and Tumors of the Labia Majora, Vegetations of the Vulva, Hypertrophy of the

Clitoris, Clitoridectomy, Episiorrhaphy, Vaginismus, Coccyodynia, and Perineorrhaphy. The triangular perineal body, the C-shape of the normal and the S-shape of the ruptured perineum are copied in description and diagram from Gaillard Thomas, who clearly shows the usual manner of reparation of the laceration by the union of the superficial perineal tissues, without restoration of the triangular body. Leblond advises immediate union of a perineal laceration, if incomplete, by the single-pointed serrefines of Dr. Créquy (ignoring entirely the much better serrefines with several blunt teeth used for many years in Vienna and described by Dr. M. D. Mann in the November, 1874, number of this JOURNAL), if through the sphincter ani by deep silver sutures, preferably the quill suture.

The secondary operation for incomplete and complete rupture is also quoted and illustrated from Thomas, whose and Emmet's method the author unreservedly adopts. The complete operation is represented as that of Huë, of Rouen, but is described also as that of Thomas and Emmet, with which it is identical. A diagram of Bantock's method of applying the sutures (one sett being used for the rectum alone, and another for vagina and perineum) is given, and the operation of Demarquay described and illustrated by three diagrams (butterfly-shaped denudation, separation of rectal and vaginal walls, separate suture of each). This latter method is practically identical with that of Simon, who appears to us to have perfected the introduction of the sutures, placing the rectal sutures deeply, the vaginal less so, and the perineal sutures quite superficially. We have seen excellent results achieved by this method, the bowels being kept loose, contrary to the usual practice of constipation by opium, also advised by Leblond.

We miss all reference to the treatment of the rectocele so generally complicating even incomplete perineal laceration, if of long standing, viz.: the extension of the denudation to the apex of the rectocele and the inclusion of the apex in the uppermost suture of the perineum, thus using the redundant recto-vaginal septum for the vaginal surface of the perineal body. We may as well refer at this spot to the exceedingly meagre description of the operations for rectocele and cystocele in the later chapters devoted to those lesions and to prolapsus uteri. For cystocele, only the removal of longitudinal strips of mucous membrane (Jobert de Lamballe), the triangular and horseshoe-shaped denudations of Sims and Emmet are recommended, which experience has shown to be insufficient. The complete removal of a whole triangle of mucous membrane, as practised by Thomas, the circular denudation and running bag-mouth suture of Stoltz, and the figure of 8 constricting suture of the mucosa without denudation of Gillette (*Am. Jour. Obst.*, April, 1877) should have been mentioned. For rectocele, the author says merely that the operations for cystocele apply equally to the posterior wall. He should have stated that for every rectocele, with or without actual perineal rupture, the operation for incomplete (or complete) laceration with extension to the rectocele is required; and he should have mentioned Thomas' glove-stretcher operation, and the method of Gillette above referred to. Both cystocele and

rectocele are so common and annoying affections and so generally considered incurable, that every rational operative procedure for their cure should be mentioned in a book of this kind. The author very faithfully reproduces on pages 492 and 494 the old incorrect cuts of Sims' and Emmet's operations for cystocele—incorrect, because the cuts are both inverted, the cervix being above and the urethra below in the diagrams, thus really representing, if we overlook the meatus urinarius, the posterior wall of the vagina, or else the operation performed in the knee-elbow position, not the usual position, so far as we are aware. Perhaps he is excusable in this error, since Sims' original diagram has been copied by Thomas and, I suppose, all other authors on the subject, without question, and its correctness is, no doubt, unchallenged. Still, a moment's reflection will convince one of its incorrectness as a representation of the relations of the meatus, anterior wall, and cervix of a woman in the usual position for the cystocele operation, the dorsal, and it seems time this error were rectified and its perpetuation arrested.

The chapters on Operations on the Urethra (cauterization, vegetations, prolapsus, constriction), Operations on the Bladder (lithotomy and lithotomy; the latter calls simply for the observation that the author's statement that vaginal lithotomy exposes to the danger of leaving a fistula does not correspond with the extensive observation of Dr. Thomas Addis Emmet, who has always found it difficult to keep an artificial vesico-vaginal fistula open); Operations on the Vagina (imperforation, absence, cyst, polypi, prolapsus) bring us to the article on Vesico-vaginal Fistula. After a historical review of the operation, the author describes the three principal methods, the French (of Jobert de Lamballe, cystoplasty by flaps, now almost abandoned), the German (of Simon, perpendicular denudation and deep silk sutures, dorso-gluteal position, excellent results), and the American (Sims, Thomas, Emmet, left lateral denubitus, Sims' speculum, broad superficial denudation and superficial wire sutures, now almost exclusively practised throughout the world, with the exception of Germany. Bozeman's modification consists chiefly in long previous preparatory softening of the cicatrices and gradual dilatation of the vagina, in the employment of the genupectoral position, different instruments, lead plates for the adaptation of the edges of the wound, and shot for the fixation of the wires). The methods of Sims and Bozeman have been so widely spread by their writings that it is not necessary to say more about them here than that Leblond has reproduced them *in toto*, as well as that of Simon, whose method should be familiar to American readers, from the translation of Simon's reply to Bozeman and the latter's answer, both published in the *Richmond and Louisville Medical Journal* for January and October, 1877, respectively. In view of the acknowledged excellent results so readily achieved by the American and German methods in almost all cases of fistula, the space of seven pages devoted to the minute description of a process of "Obliteration by Immediate Secondary Union," by Dr. Amabile, of Naples, seems, to a great extent, wasted. This process consists in the repeated scarification and

cauterization of the edges of the fistula for the purpose of softening the tissues, then in paring them by a set of peculiarly shaped knives, and finally in their apposition by differently shaped serrefines drawn together by twisted wires, which serrefines are to be removed after five to seven days. The advantage of this ingenious trifling is beyond our comprehension.

In the next chapter on Operations on the Uterus, we find in the article on Incision of the Cervix a long quotation from the famous paper on Incision and Discission of the Cervix, by Dr. Peaslee, but the French author carefully refrains from expressing any opinion on the question. We must conclude therefrom that he has had absolutely no experience with this operation, or he certainly would have contributed his share to the much-needed statistics of the comparative dangers and benefits of the various methods. He still reproduces the original articulated razor-bladed knife represented in Sims' first edition, which was replaced years ago by the longer blade of various sizes movably fixed in a short, stout handle.

An article on the Cure of Constriction of the Cervix by Electrolysis follows, a process which the author thinks greatly preferable to incision, with or without dilatation, on account of its slight danger and easy execution.

The article on Amputation of the Cervix treats of another subject of which the author has made a special study, having presented a paper on the operation to the International Medical Congress in Geneva, in 1877. The amputation *in situ* is advised by the majority of operators as less likely to draw down and expose the peritoneum to injury, an accident which, by-the-by, has happened to Sims, Braun, and others without the least evil consequences to the patient, and which has lost much of the horror with which it was formerly regarded. The author goes on to describe the various methods of operation with scissors, knife, thermo-cautery, ecraseur, and galvano-caustic loop, mentioning particularly the procedures of Sims (scissors, bilat. section, amputation of each half, covering of stump with mucosa), Huguier (knife, conoid or wedge-shaped excision, union of flaps), Kehrer (knife, excision of a triangular pyramid of tissue, union of the two lateral flaps thus formed by sutures), and devoting the bulk of the chapter to the galvano-cautery loop amputation. Five methods of performing the latter operation are described: (1. Léon Labbé, without a speculum; 2. Leblond, with a so-called "speculum portefeuille," a speculum carrying the wire loop and automatically fastening it about the cervix, after which the speculum is removed, and the amputation proceeded with; 3. Leblond, double tenaculum with changeable articulation, so as to permit one blade to be inserted at a different elevation from the other, for the purpose of oblique amputation; 4. Chéron, complicated handle, so constructed as to amputate by producing apposition by tension of the two parts of the wire encircling the cervix, wooden speculum; 5. Sims, left lateral position, Sims' speculum, fixation of wire loop by double tenaculum). Possessing this last method, it seems to us that the other four are entirely superfluous, for in none of them is the adjustment of the loop as simple, or can the vagina be

protected, or the operation watched as with Sims' speculum, to the use of which there is absolutely no obstacle in this operation, except constriction of the vulvo-vaginal canal, which would equally interfere with the other methods.

Byrne, Thomas, Goodell, and Labbé are quoted in support of the opinion that the galvano-cautery amputation is rapidly growing in popularity, and Byrne and Goodell are properly credited with advising its performance in cancer of the cervix, even when it is impracticable to remove all the diseased tissue, and the uterus is fixed, with the view of alleviating the debilitating hemorrhage. The question of sterility following the galvano-cautery amputation is not considered.

In the article on Uterine Fungosities, the author describes the curettes of Sims, Simon, and Récamier and their indications and uses, closing with concurring in the opinion of Courty, that this affection can usually be cured by much less dangerous means. It is strange how little attention Thomas' dull copper wire curette has attracted, notwithstanding its description and illustration in the several editions of his book since 1874. Our French author, while confessedly copying largely from Thomas' work, has entirely overlooked this instrument. Had he noticed and used it, he would doubtless have reconsidered his unfavorable opinion of the operation of curetting—an opinion which we will admit to be to a great extent justified, so far as the stiff sharp curettes are concerned. For a tolerably complete description of the indications, dangers, and uses of the instrument and the comparative merits of the various curettes, we refer him to our paper on the Dull Wire Curette in *Gynecological Practice* in the *Edinburgh Med. Journ.* for March and April, 1878. His mention of Simon's curette for removing intrauterine fungosities is entirely contrary to the inventor's design; Simon intended it simply to scrape away the soft portions of cancerous growths of the cervix uteri and other accessible organs, carious bone and ulcerating lymphatic glands, but never counselled its use within the uterus. The omission of this operation is another defect in the book. In the article on Prolapsus Uteri, it appears to us high time that the barbarous cauterizations of the vagina practised by Laugier, Velpeau, Gaillard, and notably Desgranges, as well as the latter's equally atrocious and useless plan of sloughing the vaginal mucosa with numerous forceps, should be relegated to the historical part of the subject, and no longer mentioned as methods to be adopted. The bulk of the chapter is devoted to the recent procedure of Léon Le Fort for complete closure of the vagina—an operation justified only by an otherwise incurable vesico-vaginal fistula, not by an affection curable, or, at least, greatly to be alleviated by the plastic operations of Simon, Bischoff (of Bâle), and antero-posterior elytro-perineorrhaphy. But Simon's operation is mentioned in six lines and a crude diagram as "episiorrhaphy" (although repeatedly described both by himself and his pupil, von Engelhardt, seven years ago), and Bischoff's method is entirely ignored, although described by his assistant Banga over two years

ago, and recently (this JOURNAL, April, 1878) reported again at length by the same author.

The chapter on *Inversio Uteri* is very well handled, and the different methods of reduction (Viardel, White, Courty, Thomas) and amputation (knife or scissors, ligature, firm or elastic) clearly described. We can only point out the peculiarity of Courty's method of reduction, in which the uterus is fixed by two fingers hooked into the cervical ring per rectum; and his plan of amputation by the elastic ligature, which seems the safest practice for removal of the organ.

The length of this review compels us to pass over the chapters on *Deviations of the Uterus*, and their reduction (in which mention is made of Campbell's pneumatic pressure reduction, of Tripier's treatment of antelexion by Faradization, and of Kœberlé's remarkable case of laparotomy for retroversion); on *Elongation and Cancer of the Cervix*, and to refer but briefly to the chapter on *Uterine Fibroids*, the rich material of which deserves commendation. We find mention made of Byrne's electro-cautery treatment of these growths; of Péan's polypotribe and double canula écraseur; of Larcher's and Demarquay and St. Vel's observations of intermittent fibroid polypi; of the removal of non-pediculated polypi by torsion (A. R. Simpson), and traction (Emmet); of the experience of Sims, Thomas, Martin, Maennel, Pozzi, Gaillard, Courty, etc., on the operative removal of sessile fibroids (with statistical figures). Sims' operation is quoted literally with figures from his recent pamphlet on *Uterine Fibroids* (Trans. Med. Soc. State of N. Y., 1875); Thomas' new serrated scoop for sessile fibroids is represented (see this JOURNAL, Oct., 1877). Leblond agrees with Courty in considering the operation of enucleation as one of the most dangerous in surgery; but he also does not condemn it entirely, like the majority of French surgeons, believing it to be practicable and justifiable if the tumor is not too large, not too firmly adherent, projecting into the uterine cavity, and tending, after sufficient administration of ergot, to become pediculated. The operation should not be hastened, and be performed only under favorable constitutional and hygienic conditions.

Basing on the improved proportion of recoveries after laparohysterotomy for fibroids recently reported (Pozzi collected 119 old cases with 77 deaths, or 64.7 per cent; Boinet. 46 cases with 34 deaths), viz: 21 cases with only 6 deaths, Leblond thinks that the operation is one that may be undertaken without the reproach of temerity. The method described is that of Péan and Urdy, who certainly deserve the credit of having systematized the operation, and by their magnificent results (7 recoveries in 9 operations) secured it an assured place in surgery. We confess to feeling disappointed at not finding a longer list of recent cases, many more of which have, to our certain knowledge, been published during the past three years (see our report on *Diseases of Women* for 1875, this JOURNAL, April, 1876), and particularly, figures of the whole number of operations now performed by Péan, a knowledge of which would materially aid in assuring the future of the operation.

Under Palliative Treatment, we find reference to the methods of Thomas, and Huë, of Rouen, for pushing large fibroids out of the pelvic cavity and preventing their return there, also brief mention of the hypodermic use of ergot and the substitution for it by Everett of the Faradic current. The influence of cold to the abdomen in controlling hemorrhage and reducing the size of the tumor, according to Gallard, is cited.

Ovarian Cysts and their Operative Treatment, Battey's Operation, and Periuterine Tumors form the subjects of the three closing chapters of the book. In the article on Ovarian Cysts, the curative injection of tinct. iodine and iodide of potash after paracentesis is described at length after a French surgeon, Boinet, who is reported to have cured 64 cases out of 130 operated on by this method, and for whom the credit is claimed of having first systematized this treatment. Although we confess that these figures are new to us, we having been taught to look upon the radical cure of an ovarian cyst by iodine injections as a lucky, but rare, accident, we cannot help regarding the method as too uncertain to admit of its ever rivalling ovariectomy, any more than the recently extolled electrolytic treatment, mention of which Leblond has seen fit entirely to omit, and which certainly can lay claim to quite as much practical value as iodine injections.

Although it is universally acknowledged that Ephraim McDowell, of Kentucky, in 1809, performed the first actual ovariectomy for ovarian dropsy, and although recently an apparently well-authenticated claimant for the priority has appeared in Italy, the latter having removed a cancerous ovary, still Leblond, with characteristic French partiality, and in spite of his evident thorough acquaintance with foreign medical literature, entirely ignores the American and Italian claimants, and places a Frenchman, one Laumonier, of Rouen, at the head of the list as the first man (1781) to remove successfully one of the ovaries of a woman afflicted with encysted dropsy of the tube complicated by ovaritis. This, however, is not ovariectomy proper, as now understood, for cystic enlargement of the organ.

The description of the operation is taken chiefly from Kœberlé and Péan, France's two greatest and almost only ovariectomists, but Spencer Wells, Thomas and Peaslee, and others are freely cited for statistics. A table of Gallez up to January 1st, 1870, contains 2,187 operations, with 1,331 recoveries, 58.60 per cent. Péan, to 1876, had 154 ovariectomies, with 108 recoveries, 70 per cent; Boinet, to 1877, 76 cases, 48 recoveries; Krassowsky, 24 operations, 13 recoveries; Kœberlé, to March, 1878, 293 operations, 218 recoveries, 75 per cent. Thanks to the results of these French operators, the success of the operation in France is now, after years of neglect, thoroughly assured. For the individual peculiarities of the French operation we must refer to the original. We will simply state that Kœberlé transfixes the pedicle by a long needle and fastens it in the lower angle of the wound, believing "dropping" the pedicle to be dangerous; and that he employs abdominal drainage only in exceptional cases where fluid exudation is expected.

Early vaginal ovariectomy is pronounced, in concurrence with Kæberlé, to be a hazardous operation, not to be recommended.

Batthey's operation is described according to the now well-known principles of its author, and the indications are taken entirely from Sims' latest paper in the *British Med. Jour.*, Oct., 1877. Leblond thinks such an operation should be accepted with proper reserve, and certainly not practised for simple ovaritis. The substance of the last chapter on Periuterine Tumors, with illustrations, is taken from Barnes' recent excellent paper in the *St. George's Hospital Reports* for 1877, closing with an account of the vaginal (preferably) and rectal puncture of liquid and semiliquid pelvic tumors.

Before closing this review, we wish to point out two omissions, one of which, at least, is entirely incomprehensible and deserving of the severest censure. It is that of Emmet's now certainly well-established operation for Laceration of the Cervix Uteri, perhaps the greatest gynecological achievement of the last decade. How a man with the evident acquaintance possessed by the author with foreign, and particularly American, gynecological literature could overlook or ignore the publications on the subject of Emmet himself, Baker, Wing, Breisky, Dudley, Chase, and others, all of which have appeared in journals doubtless easily accessible to the author, is to us inexplicable. The second omission is the likewise total ignoring of the operation of Artificial Vesico-vaginal Fistula in the Treatment of Chronic Cystitis, an operation described by Emmet and recently by Pallen in this *JOURNAL*, January, 1878. We trust a second edition will see these and other omissions and errors mentioned in this review rectified, and close with a hearty commendation of the ability, thoroughness, and caution as regards doubtful procedures, with which the work has been prepared. The illustrations, although mostly copied, are very well executed and the type-work is excellent. A noticeable fact for a French book is the rare occurrence of typographical errors in foreign proper names and quotations. We take pleasure in cordially indorsing the book (not the least merit of which is its price, 10 francs), thinking, as we stated in the beginning, that it well supplies a want doubtless felt by every gynecologist.

P. F. M.

DIE PATHOLOGIE DER WEIBLICHEN SEXUALORGANE IN LICHTDRUCK ABBILDUNGEN, NACH DER NATUR IN ORIGINAL GRÖSSE, durch anatomische und klinische Erfahrungen erläutert von DR. F. WINCKEL, Geheimer Medicinalrath, Prof. der Gynäkologie, etc., etc. Lieferung I. and II. S. Hirzel, Leipzig.

PHOTOGRAPHIC ILLUSTRATIONS OF THE PATHOLOGY OF THE FEMALE SEXUAL ORGANS FROM NATURE AND OF ORIGINAL SIZE, with anatomical and clinical commentaries. By DR. F. WINCKEL, Prof. of Gynecology and Director of the Lying-in Institute at Dresden. Leipsic, 1878. Parts I. and II.

This work may be considered as the continuation of a series which was commenced in 1854 by Kohlransch, with his "Anatomie der Beckenorgane," and has been since continued by Braune and others;

a series which places before the student and practitioner as accurate and perfect representations as possible of the normal and pathological anatomy of the human body.

The work is to consist of ten parts, each part to contain three plates, and the prospectus states that all the plates are in an advanced state of preparation, and that, therefore, the parts may be relied upon to follow each other at quarterly intervals. Only original drawings are to be presented, and we are promised an escape from the false and misleading representations of normal and diseased parts which have been perpetuated through successive decades of text-books, principally on account of the expense of preparing new designs and presenting new cuts.

The letter-press will consist of a historical sketch relating to the specimens, a statement of comparative frequency of occurrence of the affection derived from five hundred autopsies, and clinical remarks based upon twenty-five hundred cases of hospital and private practice.

In regard to such a work, the manner of execution is of course the most important, indeed the only point. We think that in this respect, judging from the two numbers before us, this work cannot fail to prove satisfactory. The plates are excellent examples of the high degree of skill attained in photo-lithography, the specimens bear the appearance of nature, and if, on first sight, the absence of color is disappointing, they are not open to the objection of that offensive over-coloring which is so marked in some anatomical works. A lens brings out the minuter features of the illustrations and adds surprisingly to their beauty and clearness.

The two parts contain representations of thirty-four different specimens of disease of the vulva, vagina, uterus, and ovaries. Fig. 2 of Plate XXI. shows a uterus with three fibroids, one subserous, one submucous, and the other intramural, together with a fibroid in the left broad ligament, the latter among the very rare occurrences, and the author presents the results of 382 autopsies of uterine fibroids! Fig. 7 of Plate XXXIV. shows a uterus with three ovaries and three ovarian ligaments. As late as 1863, Klob wrote that no case of supernumerary ovaries had been observed (p. 26). Yet here is the fifth, four others having been discovered since that time, the description of each being here given. We are now, therefore, obliged to face the clinical possibility that a woman may undergo a double ovariectomy, yet afterwards conceive and bear children or even undergo the operation again.

These details will serve as specimens of the contents of the work, and show its great interest and importance to gynecologists, on whose behalf we extend to it a hearty welcome. It is the production of an indefatigable worker in the profession, one with abundant material for observation at command, and one already well known to the profession of this country by the translation of his work on Puerperal Diseases by Dr. Chadwick, of Boston.

J. C. R.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XII.]

APRIL, 1879.

[No. 2.

ORIGINAL COMMUNICATIONS.

PREMATURE OSSIFICATION OF THE FETAL CRANIUM AS A
CAUSE OF DYSTOCIA, AND OF IMPAIRMENT OF
INTELLECT IN CHILDREN.¹

BY

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ALTHOUGH at first sight it may appear absurd to call the attention of this Society to so simple and elementary a point in obstetrics as is involved in the consideration of the very important part which the compressibility of the fetal cranium plays in facilitating its passage through the pelvic straits, yet I will venture to do so, feeling, as I know others do whose acquaintance with obstetric literature is far better than mine, that the subject has hardly received the consideration it merits. For although it is admitted that dystocia may be caused by a premature ossification of the fetal cranial bones, and closure of the sutures and fontanels, and this condition of

¹ Read before the N. Y. Obstetrical Society, Dec., 1878.

the child's head contribute to produce one of the most formidable complications of parturition, yet is the subject disposed of by many, nay most, authors in very few words, and it seems to me too cursorily. I will not take time by quoting from many authors, but merely cite from the text-book of an eminent English obstetrician what I believe to be a very fair example of the treatment the subject generally receives in most obstetrical text-books. In the work I allude to (and the author is usually thorough, and not inclined to slight anything), less than thirty lines are devoted to the subject of "Premature Ossification of the Fetal Cranium." He says of this: "It is not probable that this conformation will be detected early in the labor, but when delay in the descent of the head appears, we may be able to satisfy ourselves both that it is not larger than common, and that it is not more strongly ossified than usual, by the introduction of two or more fingers up to the pelvic brim." He concludes as follows: "Regarding the treatment of such a case, I have nothing to offer beyond the instructions so often inculcated—that we should wait as long as is consistent with the woman's safety, and when compelled, use those means best adapted to the case, the long or short forceps, if the head have descended sufficiently low to lie within their grasp; the perforator, if by its agency alone we can snatch the patient from impending death." It seems to me that this is not giving the subject quite the importance it deserves, nor do I think the advice good "to wait as long as is consistent with the woman's safety" in any case in which digital examination has enabled us to clearly diagnosticate the *coincidence* of a *large* and also *prematurely ossified* fetal head. Nor in such a case do I think there should be any question as to whether the forceps or perforator should be used, regarding extraction with forceps under such conditions as very dangerous for the mother, and inadmissible. As to the remark that it is unlikely that this conformation will be made out early in the labor, may we not assume that it might be made out much earlier than it generally is, were it looked for, as it always would be, were the danger to the mother, so liable to arise from the passage of a large and also prematurely ossified fetal head, and the dangers menacing the infancy of any child so constituted, better known and appreciated.

In the year 1863, a brochure was published in Paris by Dr. Joulin, entitled, as I translate, "Cases of Dystocia dependent on the Fetus," and which was, with other valuable matter, placed at my disposal by the kindness and courtesy of Prof. A. Jacobi, which I here desire to acknowledge. In this admirable treatise of Dr. Joulin's, which forms a pamphlet of 126 pages, in speaking of dystocia caused by "excess of volume of the head," he cites many authorities, and says: "The Germans admit that the obstacle *may* be an over-sized head otherwise normal, but they point out as a phenomenon 'little studied in France,' that the situation may be further complicated by an ossification of the fontanels from development of the ossa Wormiana." Several authors are quoted, among others Hohl (Leipzig, 1855), who have noted these ossifications, and one author, Lower (Recueil de Caspar, 1839), cites a case in which the fontanels of a very large head were so consolidated that the labor terminated with the death of both mother and child. But Dr. Joulin goes on to say that, in his own experience, he has satisfied himself that certain heads at term, there being no ossa Wormiana present, are yet of very variable compressibility, and he attributes the necessity of employing a great deal of force to make some of these heads pass through a given space, to the fact that the cranial bones in these cases were *too thick to yield*, prematurely ossified in fact, an incompressible box of bone. This view of Dr. Joulin's is doubtless the true one. Those of you who were present at the last meeting may remember (this subject then coming up) that Prof. Thomas, after stating that he had always in his teaching impressed upon his classes its importance, illustrated by the mention of a simple obstetrical experiment, how an unyielding head may be a great obstacle to safe and speedy delivery. The experiment was this. A fetal head, very soft and easily passing through the pelvis of a cadaver, was filled with plaster of Paris. When thus rendered incompressible, it could no longer be drawn through the pelvis as before. Several of the authorities cited by Dr. Joulin, among others de la Motte, have noticed in these cases of premature ossification an unusual roundness of the head. The cranial bones, they say, are "round, hard, on a level, not lapping over." One writer says,

speaking of dystocia caused by undue size of the head, "the skull was round, not ovoid, and the bones were thicker than usual. The important question now presents itself, How shall we manage such cases ?

Dr. Joulin says as to this : "How to manage these cases of dystocia is a most embarrassing question. The size of the child is very unlikely to be known while it is still in utero, and the practitioner who finds the labor arrested, and the head unable to progress in a normal pelvis, well shaped, will probably decide to interfere actively before the real cause of the dystocia is known to him, and he will interfere either with the forceps or the perforator, according to the difficulties which the size of the cranium presents." As to version, Dr. Joulin repudiates the procedure utterly in such cases, and considers the advocacy of it by Mad. Lachapelle and Dr. Simpson as founded, in the case of the first, upon results claimed as successes which were not such, and that Dr. Simpson, when he advocated version, had had at the time he wrote (1847) but one case upon which to found his theory, and that his extensive practice during eight subsequent years furnished but three cases, and all but one of these doubtful.

It seems to me that we must accept as just the conclusions of Dr. Joulin, and admit, to use his words, "that in cases of disproportion between a too large head and the diameters of the pelvis, the idea of version should never in any case be entertained, and recourse should be had to the forceps or the perforator."

It seems to me that, as I have before observed, it would be a very judicious rule of practice, to leave the question of forceps delivery out of the question, in any dystocia in which the existence of a large and prematurely ossified fetal cranium can be made out, using the word large to mean, not microcephalic, but being of the usual proportions to the pelvic diameters. For, even if not inordinately large, if ossified, its delivery whole might be very difficult and dangerous. We may resort to the perforator with less than our usual and natural repugnance to its use, if we bear in mind the fact that there is every reason to believe that quite a proportion of children born with closed or partially closed fontanels and ossified sutures will, if

not early cut off with symptoms of brain irritation and pressure, be epileptic and idiotic. In a most able and instructive paper published in the January No. for 1858 of the *New York Journal of Medicine*, Prof. A. Jacobi has thoroughly gone over this whole subject. His paper, which is entitled "Etiological and Prognostic Importance of the Premature Closure of the Fontanels and Sutures of the Infantile Cranium," is full of most interesting observations, and I think no one can read it without being convinced that an open condition of the fontanels and sutures for some time after birth is *generally* essential to the well-being, mental and physical, of the infant. I say generally, because the reverse condition does not by any means give rise in all cases to cerebral trouble. Still there is always reason to fear the gravest consequences, and consequences which, as Prof. Jacobi shows, treatment has little power to avert or cure. Commenting upon a case of cerebral sclerosis, and the pathological conditions shown by autopsy, he says: "According to the present symptoms in each case, whether a distinct and perfect diagnosis be made or not, either a stimulant or an antiphlogistic treatment will seem to be indicated. The former will aggravate the condition of the patient in every case, which is combined with congestion of the brain and its membranes, while theoretically it should be adopted only where the main symptoms are those of perfect depression. The debilitating course of treatment may be able, at once with the diminution of the dimensions of the body in general, to remove for a while the disproportion between the brain and the cranium. Taken theoretically, all this is right and promising of success. But we cannot continue to debilitate without killing the patients by exhaustion, or by meningeal exudation, so frequently the results of general and continued inanition."

Finally, as to prognosis in these cases, Prof. Jacobi says, while emphatically disclaiming the idea that every child with prematurely ossified fontanels is doomed to die early with cerebral symptoms, that he believes that "every child whose fontanels and cranial junctures have been prematurely closed, and who falls sick with symptoms of cerebral irritation or depression, is predestined to certain death."

Now if we admit, as I think we may, that such symptoms *will* show themselves soon after birth in a great majority of children with prematurely closed skulls, or that they will grow up microcephalic, idiotic, epileptic, then surely one should not hesitate, in view of the great gain to the mother, to relieve her by the speedy and easy expedient of craniotomy, as soon as fully satisfied that the fetal head is large *and* unduly solidified. The probabilities are great that the life of such a child would be no comfort or advantage either to itself, its parents, or the world, and I fail to see any justification for the risk to the mother, of attempts to deliver by forceps in such cases, unless the cranial and pelvic proportions are such as to clearly warrant it, since the probabilities of the child's future are as noted. A very moderate amount of rigidity and incompressibility of the fetal head may retard speedy delivery, as I noted in the following case :

I attended Mrs. — in her first labor. Presentation vertex. The child was a large boy, and had one of the largest heads I have seen on a healthy child. Was obliged to deliver the head through inferior strait with forceps. Careful examination showed no tearing or bruising of the mother, and she suffered from no subsequent soreness. Mother and child did well, although for some days the head of the latter was almost comically out of shape. There had evidently been an overlap of the cranial bones, reducing the diameter of the head some inches. Subsequently, in a second confinement, the lady gave birth to another boy of moderate size and with a small head, but round and rather hard. It could not be said to be abnormal ; there was no closure of sutures or fontanel, it was simply not as compressible as the large head of the first boy. The presentation was of the vertex, as in the first case, the labor was natural in every way, and was terminated within a reasonable time by the natural powers, yet there was some bruising of the soft parts of the mother, nothing at all serious, but enough to cause soreness about the labia and urethra for a time afterwards.

So far as it goes, the history of these two confinements would seem to show that a very large head, if soft and compressible, may pass through the pelvis more readily, even in a first labor, than a small but rigid one in a second labor. This rigidity may very frequently retard labor, and it is said that it exists more frequently in the first child of a young strong woman than in those to which she may subsequently give birth. So also, we should not expect to find such a condition of the fetal

cranium in the child of a feeble, ill-nourished woman. The youthful system being especially rich in phosphates, the first child of a strong young woman may have the osseous system prematurely and unduly developed, the more especially if she lead a sedentary life during gestation. If this be accepted as a true theory, the indications as to diet, exercise, etc., in any case of pregnancy in which we may dread over-size and premature ossification are obvious.

It must here be noted that, while fetal heads may vary very much in compressibility, and pretty firm ones be common, yet cases of extreme fetal cranial ossification, cases in which the head approximates to the adult condition, and so offers a formidable obstacle to safe delivery, are very rare. At least I have always supposed them to be so, although the records of large lying-in hospitals may show otherwise. My own observations have been restricted to private practice. I have seen but three such cases, and two of these were not my patients.

CASE I.—Called in consultation to see Mrs. — in her second confinement, I think (as I cite the case from memory, having no note of it). I thought she was about 40 years of age, but it is perfectly possible she may have been much younger, since the pitiable condition she was in when I saw her might well cause one to over-estimate her age. She was a very strongly built woman, with large bones. When I saw her she had been in labor for many hours, more than twelve, and all efforts of her attending physician to effect delivery by the forceps had been of no avail. He could not account for the difficulty he met with, since, as he said, "the presentation was all right, nor did it seem to him that the head was abnormally large." I advised craniotomy at once, giving, however, a very doubtful prognosis in respect to the patient, who seemed to me in an alarmingly exhausted condition from the prolonged labor and terrible strain to which she had been subjected. The cranium of this child was very hard and thicker than usual. It was almost like boring adult bone, as I remember it, to make the aperture, nor was the cranium as compressible as it should have been after evacuation of the brain, and could not be removed whole. The delivery was readily effected. I heard that this patient died a few hours afterward.

From the condition of the skull of the child in this case, I feel sure, from what I know now, that it could never have been delivered whole with forceps, except at the risk of extensive laceration of the mother. Yet I did not urge craniotomy

because either myself or the attending physician appreciated the fetal cranial condition as the important factor in the dystocia, but simply because the woman's condition imperatively called for speedy delivery. It was not until after Case No. 3 occurred that I gave much attention to the subject. I do not know that in either of the three cases I have seen, the cranial conditions could have been so made out as to warrant craniotomy. They certainly escaped attention, and were not appreciated, although frequent examinations were made in each case.

CASE II.—I saw this in consultation with a distinguished physician (now dead) who enjoyed a well-deserved high reputation as an obstetrician and skilful surgeon. I mention this to show that the fetal condition in question may easily escape the notice of the most experienced observer, and also to show that it may constitute a formidable obstacle to delivery by forceps in very skilful hands.

The patient, a strong, healthy woman, I found had been in labor several hours. The presentation was of the vertex, the vagina soft and moist, the pains good, and yet not only did the head not advance, but the most patient efforts of the attending physician made previous to my arrival to extract with the forceps had utterly failed. Nor did I have any better success. The case was a puzzle. The rouble could not be narrow pelvic diameters, for the woman had reviously given birth without any trouble to children of good size. It only remained then to suppose that, although the head did not *pseem* unduly large, that it *was* probably so. I certainly never noticed anything very peculiar about the cranium in this case—certainly I did not think of premature ossification, nor do I think the other gentleman did. I performed craniotomy, finding the cranial bones so hard and unyielding as to require the free use of the cutting forceps to reduce the head sufficiently. The delivery was then easy. The patient did well and recovered without any bad symptom.

Undoubtedly, had the ossification in this case gone to the extent of complete closure of the posterior fontanel, we should have noticed it and attributed the dystocia to its true cause; but it was not, and the fact that the bones were very hard did not make at the time much impression, and the case remained in our memories as one of successful craniotomy performed in consequence of the existence of a fetal head which, although not seeming very large, was yet proven to be too large to pass through the pelvis.

CASE III.—Dystocia in this case cannot, I am aware, be wholly attributed to the premature ossification of parts of the fetal cranium which existed, since the enormous size of the child, and especially

the great breadth of its shoulders, would alone have made its delivery difficult and dangerous. I attended Mrs. — in her first confinement. She was about twenty-six years of age. I had attended her previously in a miscarriage, subsequently to which she was for a time a patient of our late lamented friend Dr. Peaslee, and had for him that respect and affection which he inspired in all. I mention this fact of the previous miscarriage and subsequent treatment by Prof. Peaslee to show that we both had had, previous to her confinement, ample opportunity to satisfy ourselves that this lady, who was tall and well-shaped, had a well-proportioned and roomy pelvis. She was not very large at full term, and there was nothing to indicate a very large child, and nothing to lead us to anticipate one, other than the fact that the mother was not a small woman, and the father exceptionally tall and large. There was nothing at all peculiar about the labor for several hours, and nothing to find fault with, save that the waters broke earlier than I could have wished, and the pains were not good strong pains; but, although tolerably regular, weak and ineffectual. To this I attributed the very slow progress of the head. These pains continued through the day with some intervals of quiet. At evening, when at my request Prof. Peaslee saw her, the patient was bright and cheerful, with pulse, countenance, and strength good. After a very careful examination Peaslee said, "He could see no reason whatever for instrumental interference then," that it was a "lazy labor," and that if, after waiting a few hours more, there was no progress, he thought "delivery with forceps would be easy." At the end of three hours we decided to interfere, but not from any urgency of symptoms shown by the patient. She was strong and with good pulse. Neither was there such impaction as to endanger the soft parts of the mother and to call for immediate action. It was not difficult to apply the forceps. Most unexpectedly to us, however, extraction proved extremely difficult, and baffled for a time our best-directed efforts. Prof. Peaslee exercised the greatest care in the manipulation of the forceps during the passage of the head through the soft parts, but neither his caution and skill, nor the care given to the support of the perineum, sufficed to prevent severe laceration. The rent was at once secured with silver sutures, and the greatest care used in the diligent employment of antiseptic washes, but the patient died some few days afterward of peritonitis. An examination of the body of the infant, which was born dead, furnished an explanation of the difficulty we had met with. At the first glance there was nothing to be noted about the child which should have prevented its delivery by the forceps, in skilful hands, without injury to the mother. Both Prof. Peaslee and myself had so delivered heavier children, and with as large heads. I had, in one instance, delivered one weighing nearly three-quarters of a pound more than this one, and neither mother nor child was injured. But on more careful examination certain points could be noted. The head, is true, was, while quite large, not abnormally so, but it was prematurely developed, *round* and *hard*, more like the head of a child

some months old, than that of one newly born. There was extensive premature ossification, especially of all the front part of the cranium. Had the part which presented during labor been equally so, I think it quite possible we might have noticed it and have modified our action. Next, it could be remarked that, although the child, a male, weighed less than twelve pounds, yet was it of most unusual size. Some of its dimensions indeed, such as height, breadth across shoulders, and circumference exceed those of any newly-born child of which I can find record. I regret I cannot, at this time, give them, but hope at some future time to procure a copy of the measurements taken.

In a general way, an idea of the size of this child may be obtained if I mention the fact that, although the coffin which was brought to receive it was one such as is commonly sold as amply large for a baby three months old, yet it was necessary to remove the lining before the body could be placed in it, and then the shoulders were pressed forward by the sides of the box. The skeleton of this child was likewise prematurely ossified, and the firmness and incompressibility of both cranium and body made a safe delivery by forceps impossible, which mere over-size perhaps might not have done.

It was easy enough to see *after* delivery that the true thing to have been done in this case was craniotomy, and removal of the child piecemeal, but I do not think the state of things could have been appreciated *before*. But, nevertheless, the case may teach this much: the importance of ascertaining early in the labor, as far as it may be possible to do so, the condition of the fetal osseous system. I will say in conclusion that the light weight of this child, when the size of its body was considered, was a source of surprise to all who saw it. If the scales were correct, however, it did not weigh quite twelve pounds.

Of the cases in which the prematurely ossified skull has given rise to symptoms of cerebral irritation, I have seen but two.

CASE I.—Female child, lived only twelve days, being in constant pain, groaning, restless, and in a semi-tetanic condition until death. The autopsy showed premature ossification, the occipital bone overlapped by and firmly united to the parietal bones, with the posterior fontanel obliterated. It has been asserted that a similar condition quite often exists in negro children, and it has been suggested that the great liability they show to tetanus may be connected with an asserted tendency in that race to premature closure of the cranial sutures and fontanels.

CASE II.—This case occurred in the practice of Dr. Van Rensselaer, of New Brighton, Staten Island, and I saw the child once in consultation with him. The child, a well-formed female, weighed at birth ten pounds. The labor was easy and natural, lasting only two hours. I note especially the size of the child and the short time of labor, because it is clear that in this case a too mature fetal head offered no impediment to delivery. The child was born February 24th, and had a slight convulsion March 4th; relieved by warm bath. March 15th, a convulsion occurred, lasting about two minutes, and these continued every hour for a time, and then increasing in frequency until, at the time I saw her, March 17th, they occurred as often as once in fifteen minutes, and even less. Previous to my visit, in fact as soon as the tendency to convulsions showed itself, Dr. Van Rensselaer had discarded the diet of cow's milk upon which the child had been previously fed, and substituted barley-water. He had also given potass. bromide, one grain every two hours. The child had every appearance of good health, remarkably well shaped, and well nourished. It had several seizures during the short time I was watching it. These convulsive seizures appeared more like those of chronic epilepsy than like common infantile convulsions. They were slight at times and of brief duration, the "petit mal" of French writers on epilepsy, and might easily have escaped observation, and shown only by a brief look of unconsciousness and a passing inconsiderable distortion of the features. Between each attack the child seemed bright and well. The history of this case and the condition of the cranium, which will be noted, indicated that the case was one of epilepsy from cranial compression, and such was the diagnosis I made. I then found Dr. Van Rensselaer had, before my visit, arrived at a similar opinion.

The bromide of potassium was now given in larger doses, the diet, barley-water, somewhat restricted, and after March 19th the convulsions ceased, and the child did well until July 19th, when symptoms of cholera infantum appeared, and on the 20th the child died after a very severe convulsion. There was no autopsy. The first thing I noticed about the head of this child was its mature look. It was of good shape and size, but the bones were very hard, the fontanels too small, and the sutures not distinct. There was also reason to believe that premature ossification existed in other parts of the skeleton. Since the child's death Dr. Van Rensselaer writes me: "I have no reason to doubt the correctness of your diagnosis of this case."

A CONTRIBUTION TO THE ETIOLOGY, PATHOLOGY, AND
THERAPEUTICS OF CHOLERA INFANTUM.

BY

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(With nine tables.)

IN the discussion of this subject, many of our physicians and not a few of our writers leave us more or less confused as to the nature and peculiar characteristics of the disease, there seeming to be a kind of tacit willingness to include all the intestinal troubles of the hot months under the head of *Cholera Infantum*. This is perhaps a relic of the simple nomenclature of our fathers, who were in the habit of satisfying their patrons, if not themselves, with such terms as "brain fever," "lung fever," "dropsy," etc., or it may be that this apparently too general application of the term *Cholera Infantum* arises from a conviction in the minds of practical physicians that these diseases are only so many scions springing from a common root, in which case cholera infantum is only a name which, while smacking more of the school-room, yet means nothing more and nothing less than the old and commonplace "summer complaint." There are fairly good reasons for the use of the name in a generic sense, which will appear, although we shall prefer to use it in a specific sense, as being applicable to a disease of choleraic type, affecting infants in the season of highest temperature. This literalness of application is not, however, compulsory.

It is not easy to tell just what percentage of the reported deaths from cholera infantum were the result of a disease having real choleraic features. The health authorities of our large cities are not in harmony in the form of their reports—many lumping all diseases attended by diarrheal symptoms, at whatever season of the year they may occur, under the one head of "diarrheal diseases;" others subdividing without apparently sufficient reason, and even reporting what is evidently

the same disease under different heads. This is blamed on the want of uniformity in physicians' reports ; but how is this much-to-be-desired uniformity to be attained except through the central supervision of the health officer ? If the health authorities of our larger cities could agree on some uniform system of registration, briefly defining such diseases as are likely, from any similarity of symptoms or pathological relationship, to be confounded with each other, reports would soon approach accuracy, and a body of statistics would be constructed which would be of inestimable value to the student. There is a barely noticeable disposition among the more exact thinkers and the book-makers to cast out as worthless the evidence of the great mass of medical practitioners, because of a lack of technical finish, which, it is perhaps too hastily concluded, must assimilate the record of their work to that of the ignoramus pure and simple, whose capital is his large pretensions. This disposition, if, indeed, it has anything but an imaginary existence, might, with profit to the advancement of practical medicine, be held in check. Classification, to be practical, must of necessity be rather coarse in order to adapt itself to the grain of the great mass—the rank and file—who in the main observe well, though not so systematically as we could wish. Exceedingly fine distinctions must always be impalpable to the ordinary senses of ordinary men. The great office-workers do not contribute largely to our mortality statistics, but we will derive great comfort as we proceed, in finding that the figures of these common men are stupendously significant—that the bullet and the bayonet are in the aggregate little less important than the epaulette and the gold lace.

It is not very clear that a degree of discrimination which enables a physician to distinguish between inflammatory bowel troubles and cholera infantum *before* and *after* the hottest days of summer should not as well enable him to make the same distinction at the time when cholera infantum is most rife, so that, although our statistics are not so accurate as we would wish, they are, I believe, more reliable than would seem from Meigs' and Pepper's intimation that “a large majority of the deaths registered in our mortality returns under the title of Cholera Infantum are the result, not of a true choleraic disease,

but rather of simple diarrhea and entero-colitis." I would rather suppose that, in a large majority of the cases so reported, the choleraic feature was present at some time during the illness, though very likely not at or very near the time of death. Which-ever surmise may be true, the statistics are scarcely impaired for our purpose.

The onset of cholera infantum is characterized by copious watery evacuations from the bowels, often attended by nausea and free watery vomiting. Attending upon this, or even sometimes preceding it, or rapidly succeeding upon it, is extreme muscular prostration and great depression of the respiratory functions; there is generally more or less griping pain and restlessness, and a rapid appearance of all the symptoms of collapse, coldness of the surface and tongue, feeble, rapid pulse, and partial or total loss of voice. Cholera infantum proper lasts but a few hours—hardly a few days—when it ends in recovery, death, or inflammatory disease of some portion of the intestinal tract; in the latter case the choleraic disease is readily rekindled by conditions similar to those which brought about the first attack.

The condition under which cholera infantum appears, and the *only* condition essential to its development, is continued high temperature day and night—a mean thermometer above 75°, with small daily range. This high and slightly varying temperature continued from six to ten days will invariably, in our climate, bring cholera infantum (together with other bowel troubles symptomatically more or less distinct, but pathologically akin to cholera infantum), and the longer this condition of things continues the more numerous and the more intractable the cases become. This is as true in the country as in the city, though we are led to think, as we read the books, that this is a disease of the city especially. Deaths are registered, to be sure, and the books are made in the cities, but if the conditions above mentioned exist in the country, the disease appears there—of course, not a great many cases, for the susceptible babies furnished by a single block in the city would out-number those of two or three square miles in the country—yet I am glad to admit that the *conditions* for obvious reasons are not so likely to be present in the country: the contrast, in point of

green grass, shade, cool water, and moving air, is no less marked than is the percentage of mortality, and it is *no more* marked.

Few, if any recoveries will take place until the temperature falls; this fall is usually attended by rain, but this does not seem to be essential, the fall of temperature alone being sufficient to bring about a better state of things (there being apparently no constant relation between barometric and hygrometric fluctuations and the rise and fall of the death-rate from this class of diseases). When the temperature falls, cases improve and new cases cease to appear. Sewer emanations do not seem to have anything directly to do with the production of the disease, except so far as they tend to impair the general health, and thus diminish the power of the system to resist any disease-producing influence, and sewer poisons are no less abundant and deadly at other times than they are when cholera infantum cases are most numerous, and this is the time of year above others when the sewers are abundantly "flushed."

Filth and decomposing organic matter are present at all times during the summer months, and in the hottest weather decomposition is *favoured* by the very rains which put a check on the ravages of cholera infantum (heat in the absence of moisture not being specially favorable to rapid decomposition), so that this consideration has not much weight, except so far as it affects general hygienic conditions.

Unripe fruits are not confined to this time of the year specially, and if they are hurtful at all to children, the race is most grievously misled by its instincts, for who ever saw a youngster who would not, in the summer season, exchange all his earthly possessions for a green apple, and who ever saw a child in good health injured by an unripe apple or by any quantity of them not altogether extravagant and unreasonable? But the sufferers from cholera infantum, we might say, are all under two years of age, and perhaps three-fourths of them are under one year, and hence have not come into the green-fruit eating stage of their existence. Yet we do not hesitate to admit that improper food or *proper* food in improper quantities or at improper times tending to impair the di-

gestive powers to that extent tends to impair the power of the system to resist any morbidic or malign influence. There would seem to be little risk in venturing the opinion that, in the aggregate, children are fed with a hundred per cent more care in the hot months than at any other season of the year. To be sure, *careful ignorance* does not count for much, but this is the time of year, above all others, when well-meaning mothers inquire of their physician with regard to the feeding and clothing of their children ; and it is surely within bounds to say that a hundred per cent more *judicious* care is bestowed on infants at this time of year than at any other.

After all these considerations have been given their proper weight (and we do not wish to evade this), unless there is a succession of days of high temperature and small daily range, there is *no* cholera infantum ; while on the other hand, with a continued high temperature for several successive days with but slight fall during the night, there *is* cholera infantum, and, in the natural course of things, there are no recoveries unless the temperature falls.¹

The following tables have been constructed to illustrate the constant relation which exists between thermal fluctuations and the rate of mortality from the disease or diseases under consideration. Whatever value they possess must be credited to the kindness and enthusiasm of the officers in the different cities having control of the mortality records.

¹ The weeks showing the highest mean temperature and the highest means of the minimum are frequently accompanied or closely followed by the greatest mortality in the very young, and in those enfeebled by wasting diseases.

The mean of the minimum temperatures has special mention for the reason that, in proportion as that weekly average rises and is maintained above 50°, the atmospheric conditions become more and more favorable to fatal epidemic diarrhea. For while the minimum mean remains high, there can be few cool nights to mitigate the prostrating effects of the torrid day-heat. A high maximum accompanied by a low minimum is (*much*) less dangerous than a long-sustained high minimum mean. (*Dr. Wyckoff, Register of Brooklyn, in Proceedings of Med. Soc. Co. of Kings, Nov., 1878.*)

TABLE I.

Showing the weekly mortality from Cholera Infantum in the City of Philadelphia for the years 1874-'75-'76-'77, together with the weekly mean thermometer for the weeks beginning with the twentieth week of the year and ending with the fortieth. Also showing the average weekly mortality and temperature for corresponding weeks in these years.

Weeks....	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
† { Mortality ..	2	3	3	11	6	13	32	63	106	154	90	52	50	61	38	34	29	34	14	8	8
1874 { Mean temp.	56°	66°	66°	76°	70°	77°	76°	75°	78°	74°	75°	70°	78°	76°	65°	70°	73°	68°	64°	62°	59°
1875 { Mortality ..	1	5	3	9	11	28	83	92	110	114	104	79	72	73	56	36	29	19	15	12	8
1876 { Mean temp.	62°	71°	66°	67°	67°	77°	76°	76°	76°	74°	75°	70°	75°	76°	67°	77°	69°	64°	54°	60°	56°
1876 { Mortality...	5	7	4	16	15	44	113	176	213	115	97	57	59	61	49	28	24	27	15	8	5
1876 { Mean temp.	54°	64°	67°	72°	72°	72°	81°	83°	83°	80°	71°	70°	78°	76°	74°	73°	67°	63°	64°	58°	55°
1877 { Mortality...	1	3	7	13	12	25	75	115	136	121	93	89	67	50	41	38	21	12	8	6	6
1877 { Mean temp.	71°	62°	69°	72°	71°	71°	72°	73°	73°	76°	79°	74°	74°	74°	75°	79°	64°	69°	65°	67°	62°
1878 { Mortality...	4	2	1	11	7	20	35	70	92	81	84	47	43	50	40	30	16	12	7	12	1
1878 { Mean temp.	53°	62°	64°	64°	64°	69°	76°	80°	76°	80°	77°	74°	76°	74°	72°	70°	74°	69°	68°	61°	64°
Av. { Mortality...	2.6	4.0	3.6	12.0	10.2	26.0	67.6	103.2	131.4	119.0	93.6	64.8	58.2	59.0	44.8	33.2	23.8	20.8	11.8	9.2	5.6
Av. { Mean temp.	58.2°	65.0°	66.4°	70.2°	68.8°	73.2°	76.2°	77.4°	77.2°	76.8°	75.4°	71.8°	76.2°	75.2°	70.6°	73.8°	69.4°	66.6°	63.0°	61.6°	59.2°

TABLE II.

Showing the weekly mortality in the City of New York from "Diarrheal Diseases" of children under five years of age, together with the weekly mean thermometer for the weeks beginning with the twentieth and ending with the fortieth week of the years 1867-'68-'69-'70-'71-'72-'73-'74-'75, with the average mortality of the corresponding weeks for the nine years.

Weeks.....	20th	21st	22d	23d	24th	25th	26th	27th	28th	29th	30th	31st	32d	33d	34th	35th	36th	37th	38th	39th	40th
1867 { Mortality ..	9	8	7	12	13	22	33	64	133	182	247	229	229	200	189	164	144	109	112	59	54
1868 { Mean temp.	59°	57°	67°	70°	66°	70°	69°	77°	72°	68°	75°	73°	75°	76°	75°	70°	72°	64°	70°	59°	58°
1869 { Mortality ..	18	9	13	14	10	21	27	45	164	396	333	316	293	233	259	191	191	121	111	86	61
1869 { Mean temp.	55°	56°	61°	65°	64°	73°	70°	80°	80°	88°	78°	80°	78°	74°	76°	74°	76°	74°	63°	60°	58°
1869 { Mortality ..	22	17	27	29	31	54	100	197	262	256	196	167	177	159	169	98	80	53	61	57	41
1869 { Mean temp.	56°	63°	68°	59°	71°	71°	74°	71°	76°	72°	75°	71°	74°	77°	74°	66°	72°	69°	69°	61°	60°
1870 { Mortality ..	11	18	14	28	48	118	283	221	302	379	332	251	246	180	165	127	99	86	63	85	53
1870 { Mean temp.	67°	64°	65°	68°	74°	78°	78°	71°	79°	82°	81°	72°	80°	76°	75°	74°	69°	66°	68°	70°	61°
1871 { Mortality ..	25	33	36	36	83	118	214	279	303	235	158	147	151	152	138	141	143	100	79	60	34
1871 { Mean temp.	61°	70°	73°	72°	67°	68°	68°	75°	79°	70°	70°	75°	78°	74°	72°	73°	69°	62°	59°	58°	60°
1872 { Mortality ..	32	38	32	46	59	152	299	618	448	403	298	293	199	248	241	166	149	127	98	81	65
1872 { Mean temp.	63°	66°	63°	64°	75°	77°	74°	84°	79°	80°	66°	74°	75°	81°	79°	71°	66°	72°	63°	68°	60°
1873 { Mortality ..	19	22	17	18	33	59	57	195	252	418	363	324	267	198	151	151	155	118	93	95	56
1873 { Mean temp.	50°	64°	70°	71°	70°	76°	68°	78°	71°	73°	79°	78°	75°	70°	72°	68°	73°	65°	61°	64°	63°
1874 { Mortality ..	12	16	13	14	25	29	40	58	146	358	349	288	255	214	234	136	136	129	127	110	104
1874 { Mean temp.	61°	57°	63°	65°	71°	67°	74°	74°	73°	76°	75°	74°	68°	73°	74°	65°	70°	72°	66°	64°	60°
1875 { Mortality ..	9	24	25	14	17	22	47	83	200	378	375	297	246	202	225	167	213	155	130	95	78
1875 { Mean temp.	58°	62°	70°	65°	66°	65°	75°	75°	76°	74°	73°	74°	70°	76°	76°	67°	76°	68°	63°	54°	60°
1876 { Aver. mort.	17.5	20.5	28.2	23.4	35.4	66.1	122.2	195.5	245.5	333.8	294.5	246.7	228.6	198.4	196.7	149.	145.5	114.2	97.1	80.8	60.6
1876 { Aver. temp.	59.7	62.1	66.6	66.5	69.3	71.6	72.2	76.0	76.2	75.8	74.7	74.5	74.7	75.2	74.7	69.7	71.4	71.2	64.6	62°	60°

TABLE III.

Showing the weekly mortality in the City of Boston from "Diarrhœal Diseases" of children under five years of age, together with the weekly mean thermometer and weekly average for the eighteen weeks beginning with the twenty-fifth and ending with the forty-second week of the years 1874-'75-'76-'77, with the average mortality, etc., of the corresponding weeks for the four years.

Week of year....	25th.	26th.	27th.	28th.	29th.	30th.	31st.	32d.	33d.	34th.	35th.	36th.	37th.	38th.	39th.	40th.	41st.	42d.
1874 { Mortality.... Mean therm. Range.....	4 36°	6 33°	13 33°	17 35°	32 42°	85 26°	85 32°	85 31°	55 27°	47 27°	44 35°	53 32°	41 26°	30 32°	22 22°	19 30°	13 35°	6 33°
1875 { Mortality.... Mean therm. Range.....	6 74° 40°	15 72° 37°	28 72° 23°	56 73° 28°	82 72° 31°	74 74° 28°	90 68° 31°	79 75° 23°	80 70° 22°	59 64° 29°	66 70° 31°	60 64° 45°	54 58° 30°	32 51° 36°	22 54° 32°	21 53° 34°	5 47° 30°	4 51° 29°
1876 { Mortality.... Mean therm. Range.....	4 72° 32°	5 75° 27°	15 78° 28°	48 75° 34°	105 76° 30°	66 67° 31°	65 66° 31°	71 76° 31°	57 69° 25°	47 66° 34°	44 68° 38°	43 60° 33°	30 60° 29°	24 56° 22°	15 55° 29°	10 53° 28°	6 48° 33°	7 44° 31°
1877 { Mortality.... Mean therm. Range.....	6 68° 40°	7 65° 31°	17 68° 24°	28 70° 27°	98 75° 32°	95 69° 25°	59 66° 20°	48 70° 30°	53 72° 25°	52 70° 32°	51 72° 33°	44 62° 28°	46 68° 35°	33 62° 42°	35 64° 38°	16 58° 43°	11 53° 31°	10 52° 31°
Av { Mortality.... Mean temp.. Range.....	5 71° 37°	8 70° 32°	18 72° 27°	37 72° 31°	79 74° 33°	80 70° 27°	74 66° 27°	70 73° 28°	61 70° 24°	51 66° 30°	51 70° 34°	50 62° 34°	42 62° 30°	29 56° 33°	23 57° 30°	16 54° 33°	8 49° 32°	6 49° 31°

I regret exceedingly my inability to complete this table as it ought to be. I would have it, if possible, begin at least two or three weeks earlier in the season. This table brings into view an element not brought out in the two previous tables, the weekly range of the thermometer.

TABLE IV.

Showing monthly mortality from Cholera Infantum and mean maximum and minimum thermometer for the months of June, July, August, and September, in Philadelphia.

	JUNE.				JULY.				AUGUST.				SEPTEMBER.			
	Mortality.	Thermom.			Mortality.	Thermom.			Mortality.	Thermom.			Mortality.	Thermom.		
		Mean.	Maximum.	Minimum.		Mean.	Maximum.	Minimum.		Mean.	Maximum.	Minimum.		Mean.	Maximum.	Minimum.
1861																
1862	20	69°			300	76°			217	77°			60	69°		
1863	14	68°			313	77°			464	79°			105	64°		
1864	74	72°			259	76°			250	79°			28	65°		
1865	184	76°			364	78°			245	74°			44	72°		
1866	68	73°			427	81°			366	72°			89	69°		
1867	38	72°			423	86°			265	75°			88	68°		
1868	71	71°			423	81°			327	78°			28	68°		
1869																
1870																
1871																
1872																
1873	76	71°	92°	49°	642	76°	94°	61°	261	72°	89°	56°	80	66°	90°	47°
1874	33	73°	97°	51°	445	75°	91°	60°	201	71°	95°	55°	111	68°	88°	52°
1875	134	70°	95°	51°	420	75°	92°	61°	316	72°	85°	58°	75	64°	90°	45°
1876	188	74°	93°	52°	601	79°	100°	60°	197	74°	91°	56°	131	64°	88°	46°
1877	125	72°	93°	54°	554	78°	95°	61°	196	75°	93°	63°	47	67°	84°	48°
1878	73															

TABLE V.

Table showing the mortality from "Diarrheal Diseases" of children under five years of age, in the City of New York, during the months of June, July, August, and September, 1871-'76, with mean monthly temperature.

	1871.		1872.		1873.		1874.		1875.		1876.		6 YEARS.	
	Mortality.	Mean temp.	Mortality.	Mean temp.	Mortality.	Mean temp.	Mortality.	Mean temp.	Mortality.	Mean temp.	Mortality.	Mean t mp.	Mean Mortality.	Mean temp.
June	436	68°	621	71°	212	70°	125	70°	143	69°	236	73°	295	70°
July.....	1033	72°	1838	77°	1420	75°	1141	74°	1288	74°	1713	79°	1422	75°
August.....	673	73°	915	75°	873	72°	905	70°	930	73°	804	75°	1221	73°
September...	408	61°	472	66°	471	65°	535	67°	553	64°	313	64°	460	65°

TABLE VI.

Showing mortality from Cholera Infantum in the City of Baltimore, for the months of June, July, August, and September, together with the monthly mean, maximum, and minimum temperature.

	Mortality.	JUNE.			Mortality.	JULY.			Mortality.	AUGUST.			Mortality.	SEPTEMBER.		
		Temperature.				Temperature.				Temperature.				Temperature.		
		Mean.	Maximum.	Minimum.		Mean.	Maximum.	Minimum.		Mean.	Maximum.	Minimum.		Mean.	Maximum.	Minimum.
1860	50				119				93				53			
1861	17				119				114				55			
1862	9				62				137				47			
1863	27				65				133				53			
1864	51				98				117				34			
1865	53				114				73				29			
1866	36				122				111				34			
1867	23				111				68				48			
1868	49				101				139				55			
1869	45				130				102				29			
1870	52				153				190				45			
1871	68	74.7°	91.0°	62.0°	93	75.3°	92.0°	60.0°	79	79.3°	91°	65°	36	63.7°	81°	50°
1872	50	75.2°	92.0°	61.0°	328	81.2°	97.0°	73.0°	158	79.3°	95°	62°	85	69.5°	88°	55°
1873	77	73.9°	95.0°	49.0°	217	79.4°	96.5°	62.0°	188	76.3°	94°	57°	98	68.0°	93°	40°
1874	137	75.9°	97.5°	54.0°	296	77.3°	95.5°	62.5°	244	72.8°	97°	52°	71	69.9°	90°	53°
1875	99	73.7°	97.0°	54.5°	316	78.0°	96.5°	61.5°	141	73.4°	88°	58°	69	65.9°	92°	43°
1876	299	75.9°	95.0°	51.0°	262	80.4°	99.0°	59.0°	96	75.9°	90°	55°	27	65.6°	88°	45°
1877	187	73.7°	95.0°	55.0°	249	78.7°	93.0°	64.0°	143	77.6°	94°	63°	27	67.9°	88°	48°
1878	106	70.1°	92.0°	51.0°	134	80.8°	98.0°	65.0°	66	76.0°	92°	59°	21	69.3°	87°	47°

TABLE VII.

Mortality from Cholera Infantum in the City of Cincinnati, O., for the months of June, July, August, and September, together with the maximum, minimum, and mean thermometer.

	JUNE.				JULY.				AUGUST.				SEPTEMBER.			
	Mortality.	Thermom.			Mortality.	Thermom.			Mortality.	Thermom.			Mortality.	Thermom.		
		Mean	Maximum	Minimum		Mean	Maximum	Minimum		Mean	Maximum	Minimum		Mean	Maximum	Minimum
1872	27				41	80°	94°	67°	44	79°	96°	55°	29	70°	93°	45°
1873	93	78°			74	77°	94°	60°	26	76°	93°	61°	21	68°	89°	45°
1874	32	79°			74	79°	103°	61°	58	77°	97°	61°	34	72°	92°	49°
1875	27	72°	91°	58°	90	77°	96°	66°	30	72°	87°	55°	41	66°	91°	41°
1876	61	75°			61	79°	96°	60°	45	77°	91°	59°	15	67°	88°	45°
1877	35	74°	92°	49°	75	77°	92°	61°	54	76°	91°	61°	27	69°	86°	50°
1878	11				70	82°	96°	65°	29	77°	93°	62°	10	68°	88°	48°
Aver.	49	75°			69	78°			41	76°			25	68°		

TABLE VIII.

Mortality in Chicago from Cholera Infantum, together with the maximum, minimum, and mean monthly thermometer, for the months of June, July, August, and September.

	JUNE.			JULY.			AUGUST.			SEPTEMBER.		
	Mortality.	Temperature			Mortality.	Temperature			Mortality.	Temperature.		
		Mean	Maximum	Minimum		Mean	Maximum	Minimum		Mean	Maximum	Minimum
1870	146				353				277			
1871	67				316				264			
1872	146				549				530			
1873	44	71°			475	71°			438	72°		
1874	68	70°	95°	46°	594	75°	99°	60°	406	72°	98°	58°
1875	33	63°	87°	40°	412	69°	88°	56°	278	69°	86°	52°
1876	30	68°			284	71°			285	76°		
1877	23	65°			246	73°			163	71°		
1878	8	64°										

TABLE IX.

Showing the number of deaths in Philadelphia from Cholera Infantum in each year from 1861 to 1875 inclusive, with the per cent of the total mortality, the number of persons living to one death from this cause, and the general averages for three years, also the mean temperature and rainfall in inches, for the month of July and the entire summer of each year.

Years.	Population.	Total number of deaths.	Deaths from cholera infantum.	Per cent of total mortality.	Number living to one death.	JULY.		SUMMER.	
						Mean temperature.	Inches of rain-fall.	Mean temperature.	Inches of rain-fall.
1861.....	576,408	13,838	618	4.46	932	76.10°	2.826	74.13°	10.175
1862.....	578,287	14,386	629	4.37	933	75.60°	2.841	73.60°	10.888
1863.....	595,166	15,045	930	6.18	643	76.99°	6.009	75.32°	11.706
1864.....	608,045	15,794	641	3.81	948	76.08°	3.770	75.82°	8.035
1865.....	618,924	16,453	884	5.37	700	78.29°	2.135	77.15°	9.943
1866.....	629,803	16,005	1,031	6.44	610	80.72°	2.513	75.63°	8.470
1867.....	640,682	13,153	862	6.55	743	76.09°	3.030	74.05°	30.820
1868.....	651,561	13,949	989	7.08	658	81.55°	2.630	75.15°	8.870
1869.....	662,440	13,997	885	6.32	748	76.29°	2.780	74.94°	8.820
1870.....	674,022	15,928	1,002	6.29	673	89.13°	3.500	78.21°	12.020
1871.....	700,000	16,118	829	5.14	843	75.62°	6.380	75.27°	17.020
1872.....	725,000	19,710	1,666	8.45	435	81.11°	9.980	78.61°	22.020
1873.....	750,000	15,845	1,114	6.10	673	76.45°	5.000	73.15°	17.390
1874.....	775,000	15,424	859	5.57	902	74.70°	5.650	72.93°	10.920
1875.....	800,000	17,805	992	5.57	806	74.60°	3.630	72.75°	14.180
Average.....	665,889	15,630	929	5.94	717				

The summer of the year 1872 was noted for the highest temperature recorded during the past fourteen years, and it was also the summer in which the greatest mortality from cholera infantum occurred. The mean temperature of July and of the summer of 1875 was less than of any July and of any summer in the fifteen years included in the table; and although the mortality from cholera infantum in this year is not the lightest, it is in excess of the mortality from this disease in only five of these years.

The above table will show that, with the exception of 1863 and 1873, the years of excessive mortality from cholera infantum, namely, 1865, 1866, 1868 and 1872, coincide with those years in which the mean temperature of July and for the most part of the summer months was unusually high. The influence of the amount of rainfall is not so decided. (Report of the Board of Health of the City and Port of Philadelphia for the year 1875, pp. 153, 154, 155, and 156.)

In the construction of these tables, fractions have been generally, for the sake of convenience, avoided, and of course something of accuracy has been sacrificed in consequence. In order to the construction of perfectly satisfactory tables for the illustration of this subject, it would be necessary, not only to have definite and uniform reports, naming disease and age of decedent, but a *daily* record of mean, maximum, and minimum thermometer. Weekly observations are not altogether satisfactory, because the mean may be high for the week, and yet a low minimum may have been reached once or more, and even without this the time is short for the development of cholera infantum, and the following week may be more marked for its high mortality, though it may have so many *days* of low mean as to show a low *weekly* mean.

A *monthly* record does not satisfy the requirements, from the fact that there may be two or even three weeks of low temperature, giving the month a low mean, and yet enough of days of high temperature to give the month a high mortality record from cholera infantum, or from a succession of hot days at the end of the month, the cumulative effects show on the mortality records of the following month of perhaps low mean. Allowing for these and other obvious elements of shortcoming, these tables certainly give some support to the views advanced.

(It will be observed that the rate of mortality in Cincinnati is low as compared with other cities. This is not so marked when we look at the aggregate mortality from "Diarrheal Diseases," and still there remains a comparatively low rate to be explained and which I will not undertake to explain, not having nearly so complete records of temperature as I would wish, though Dr. Minor, the health officer, has kindly responded, to the best of his ability, to all my calls for help.)

The disease is usually developed gradually, the child loses its vivacity, ceases to perspire, loses its desire for food, heat-rash disappears and the skin becomes dry and hot, and the little sufferer is restless and irritable. The attack in its choleraic features is often sudden, explosive, and may be fatal in a few hours, and doubtless, in many instances, the effect on the organism is so profound that death comes speedily on, even without the occurrence of vomiting or purging.

Recovery is also slow, and generally not complete until the summer ends. Although, of course, all choleraic features have disappeared from the case, yet to control the vomiting and purging is not by any means to restore the patient to health. This of itself suggests that the serous discharges are merely symptomatic, or at least not at all to be considered the sum total of the disease. A second attack of the choleraic symptoms is to be looked for under much less provocation than the first, that is, those children who have passed through one attack yield much more readily to the influence of a recurrence of continued high temperature than does a healthy child, or one who has so far escaped, so that, whereas the first attack did not occur till after from six to twelve days of continued high temperature, three to six days will be sufficient to precipitate a second attack, showing that the system had not regained its normal power of resistance, and that the disease was not fully recovered from, though the choleraic symptoms had subsided.

There are some striking resemblances between this disease and sunstroke, so much so as to suggest a pathological relationship. 1st. The same conditions seem to be sufficient for and essential to the development of each. 2d. They come and go together. 3d. The development is gradual and the recovery is slow in each, showing a profound impression made

on the living-power of the patient. 4th. The explosive character of the attack under the cumulative effects of continued high temperature with the sudden severe or fatal prostration consequent.

A condition of mal-nutrition or mal-assimilation is established before the explosion, and persists stubbornly afterward. It would seem that the blood under the influence of the continued high temperature is degraded—impaired in some of its vital qualities. A cachemic condition is established which continually becomes more profound under the persistent operation of the causes which brought it about. It is not clear whether the visceral congestions which precede the serous discharges are brought about by an interference with the presidency of the vaso-motor nerves over the circulation, or by reason of the fact that blood ill adapted to the purposes of nutrition is with proportional difficulty made to go the round of the circulation; probably both of these considerations are to have weight as factors in the complex cause.

If the view advanced (and which is not new unless in the fact that continued high temperature is made to appear as the *only* and *sufficient* cause of cholera infantum) be correct as to causation and pathology, it would seem to be suggestive of prophylactic and therapeutic measures, and in a disease so fatal, and which has proved so little amenable to treatment, preventive measures become of paramount importance. The New York Board of Health, in its circular for the information of those having the care of children, among many suggestions of great value as to food, feeding, etc., makes none, perhaps, so superlatively significant as this: "Wash your well children with *cold water* twice a day and *oftener* in the hot season." If this one prescription were carried out, cholera infantum cases could be well-nigh eliminated from the mortality reports, together with numberless other deaths from "bowel troubles" which, though they may not be called cholera infantum, owe their fatality mainly to the operation of the same cause.

Physicians might well give some attention to the education of their patrons with regard to the real cause of the great mortality among children in the hot months. Give the people to understand that, however important it may be to take special care in feeding, this will not be sufficient, alone, to carry

the infant safely through the continued high temperature likely to be encountered in July and August; that the *heat* alone, if continued for many days without decided remission, will bring on cholera infantum and probably in this way lead to the death of the child—that they must *study* to keep the little ones *cool*. Try to have people accustom their children to cool bathing and encourage its frequent repetition in the hot months. If the term of continued heat is upon us, and the child is unaccustomed to submersion in water, free and frequent cool sponging should be employed until the little fellow can be put into the water without terror. The house should be kept as cool as possible, and if it is cooler somewhere else than in the house, take the child there, and select the coolest room in the house for a sleeping room. If the child is threatened or already sick, and its room is not cool—*make* it cool with pails or tubs of *cold water* or even of ice: the temperature can be materially lowered in this way. A water-bed and pillow can be made of great service for cooling purposes, but they are not always within reach. It is generally possible at least to persuade mothers to forego or resist the deadly inclination which seems so prevalent to bury the little sufferer in the softest, biggest, hottest pillow that the nurse or mother can accommodate or tolerate on her lap.

We cannot always resort to the cold bath with safety; the writer has known a perfectly healthy, robust child, of several months, to almost lose its life in consequence of fright from being for the first time put into water. These little sufferers should be allowed ice-water in small quantities, often repeated, and even little pieces of ice when they can manage it, which they often can. Cool applications should not be withheld if the skin is dry and the body temperature high, and cool surroundings should be commanded in every case, in this way seeking to supply the fatal shortcomings of the season. The time will come when it will be as truly a part of the humane work of cities to supply the poor with ice in the hot months of summer as it now is to see that they are supplied with coal in the winter, and when it will be realized that the economy in the latter article attending a mild winter is more than counterbalanced by the consequent scarcity of the former necessity.

As to the medicines to be used, as soon as cool surroundings are secured, medicines will often be unnecessary, and so long as the temperature is not lowered they will generally be insufficient. I could not add anything profitably to the suggestions, with regard to medication, which appear every summer in the medical journals and those accessible in the several valuable American works on diseases of children. The method of treatment of entero-colitis or other forms of inflammatory bowel trouble by cold baths, as practised and recommended by Dr. Comegys in the past few years, is certainly good and rational, the high temperature of the summer months being the most important element in the causation of these troubles. I am not always bold enough to resort to the bathing as the doctor recommends, for there are always old women of both sexes, some of them professional, ready to saddle all failures on to any therapeutic measures which are not thoroughly acclimated to the locality. But I never hesitate to make it cool around the patient, and it can be done nearly, if not quite as well, though, perhaps, not quite so quickly, without putting the patient in the cold-water bath. It is to be remembered, however, that cool air reaches the lungs which cool water cannot do, and the cooling process is much favored by the peculiar anatomical provisions for bringing the air into almost actual contact with the blood-current, so that by cooling the air we secure the most efficient of cool applications *internally*, and, it may be, reduce the body temperature with the least possible disturbance of the equilibrium of the circulation.

MASSILLON, OHIO, Jan. 18, 1879.¹

¹ This paper was received in August, 1878, too late for the October number, and has since been revised and rewritten.—Ed.

PERINEORRHAPHY,

WITH SPECIAL REFERENCE TO ITS BENEFITS IN SLIGHT LACERATIONS, AND A DESCRIPTION OF A NEW MODE OF OPERATING.¹

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(With eight woodcuts.)

VERY much has been written of late years on perineo-vaginal surgery, and many different modes for producing the same results in the class of operations which come within this branch of surgical gynecology have been brought to the attention of the profession. It is, therefore, with considerable reluctance that the following paper is presented to-night, but owing to the fact that all of my auditors are practical gynecologists, while the majority are eminent, and very widely known as such, I trust that the essay may at least be the means of causing a discussion upon perineo-vaginal surgery which cannot but be valuable if participated in by the distinguished gentlemen who are here present.

In 1877, the writer read a paper before the Michigan State Medical Society, entitled, "Some of the Plastic Operations within the Vagina," in which were mentioned some new procedures in the operation for laceration of the perineum, and later one of his clinical lectures was reported by Dr. Hersey for the *Toledo Medical and Surgical Journal*, in which brief allusion was made to the same. Owing to the limited circulation of the Society's Transactions, and the fact that the clinical report was a mere abstract, some of his valued gynecological friends have expressed a desire that another paper should be published, or at least that the writer's mode of denuding the parts in plastic operations within the vagina should be given greater publicity. This would have been done at the last meeting of the American Gynecological Society but for illness, which prevented the preparation of a paper or even attendance at the meeting.

¹ A paper read before the Cincinnati Obstetrical Society, Jan. 8th, 1879.

In the following paper, the subject of perineorrhaphy or perineoplasty will be but in part considered, the object being more particularly to direct attention, *first*, to the incalculable benefit which may be obtained from proper plastic operations within the vagina in a class of lacerations which have as a rule been considered as so slight and insignificant as not to be productive of any evil consequences. *Second*, the description of an operation in which the parts can be more easily and effectually denuded than has been customary, together with other procedures which help to simplify the operation.

Among the many accidents incident to child-birth is laceration, more or less extensive, of the perineal region of the vagina, which differs in degree from a simple tearing of the fourchette to complete laceration of the perineum. The latter accident, if not immediately recognized by the accoucheur, is sure to be afterwards by the patient. The lacerations occurring between the two extremes just mentioned remain not unfrequently undiscovered during a period of years, and in the mean time patients suffer from the many accompaniments of uterine disorders occasioned by the lack of proper support to the uterus, its retarded involution, and the dislocation, to a greater or lesser extent, of all the pelvic organs. It is not my purpose to discuss the prophylaxis of laceration of the perineum, nor to dwell at any length upon the primary operation for either complete or incomplete laceration. I cannot, however, forbear adding a word concerning the primary operation, the success or failure of which depending, as it does, upon causes not unfrequently overlooked. For instance, we find many advocating, in all cases of laceration, that the parts be brought together by sutures as soon after the delivery of the child as possible. Others seem to hold the primary operation in low esteem, as success does not always follow the immediate apposition of the parts, for it sometimes happens that, in spite of careful stitching and attention to every precaution, union does not take place, and upon removal of the sutures, the lacerated perineum yawns as much as if nothing had been done. The explanation of this is, I believe, easily made. In cases of labor where there has been much delay, or much manipulation within the parturient canal with the hands alone, or long con-

tinued efforts with any instruments, a semi-pathological condition of the perineum is produced, and if it becomes torn the reparative process is very much retarded. If such a perineum is sutured, union does not take place. On the other hand, if laceration occurs in a rapid labor, whether unaided, or from the use of instruments, if the perineum is immediately sutured, or even if sutures are put in within twenty-four hours after the completion of labor, complete union will, as a rule, follow.

My own rule of practice has been, of late years, in accordance with the above expressed views. In the primary operation, I prefer to put in sutures as soon as possible after delivery of the child, while the parts are benumbed by the pressure to which they have been subjected; for material, I prefer silk, and for the better adjustment of the sutures, I use, when attainable, the long needle, the same as in the secondary operation, and, as in the secondary operation, I endeavor to keep the first and second sutures buried beneath the tissues, that they may not act as setons. These sutures are usually removed four or five days after insertion, first moving the bowels and then, after the sutures are removed, keeping the bowels locked for several days, until firm union is attained.

As already remarked of complete lacerations, if they are not recognized immediately by the accoucheur, they are sure to be soon after by the patient. It is of this class that the most has been written, and for which the benefits derived from skillful operations are never called in question. I desire briefly to direct attention more especially in this paper to a class of lacerations more commonly unrecognized. I refer to those where there has been but partial laceration, and in which the evil consequences are not made immediately apparent, but yet one of the important factors of pelvic disorders of child-bearing women.

The supports to the uterus are both above and below; it is held in position by the various ligaments—its attachment to other pelvic viscera, while it and contiguous viscera are greatly dependent for the maintenance of their normal position upon the integrity of the vagina. The vagina is a musculo-membranous canal, with only the anterior and posterior walls in apposition, and when normal and at rest, the walls are in close contact. A longitudinal section of the female pelvis demon-

strates that the vagina and rectum correspond to each other in their direction only in the upper half of the former ; below, the rectum is directed backward, so that there is a triangular-shaped space or body between the lower portion of these two canals. Now, if in the process of parturition, when this body is carried forwards and outwards, it is torn to a greater or less extent, and heals only by second intention, then the support to the pelvic viscera is weakened proportionately to the extent of laceration.

The name of perineal body has been given by Savage¹ and also adopted by Thomas² as applied to that portion midway between the posterior vulvar commissure and the anus, where the perineal structures meet and become, as it were, pressed together by a great accession of elastic tissue, while their identity is not wholly lost ; the result of this combination is a body elastic and resistant. The integrity of the female perineum, and, to a very great extent, the normal position of all the pelvic organs, depend upon this perineal body. Fig. 1 represents a profile view of the perineum copied from an article upon perineorrhaphy by my esteemed friend, Prof. Parvin. A to C represents the rectal wall. A to B, the cutaneous surface. B to C, the vaginal surface. The point A of divergence of the two canals alluded to is at C.

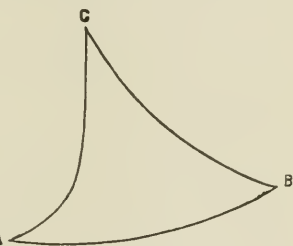


FIG. 1.

In Thomas's³ work are three diagrams, one representing the perineal body perfect, with the vaginal walls well sustained, another where it has been removed by rupture and both walls are robbed of support, and a third for the purpose of showing the perineum improperly repaired, the perineal body not restored to place, nor the vaginal walls well restored. The text accompanying these diagrams is in the lucid and unexceptional language which characterizes everything from the pen or lips of that distinguished gynecologist, but the diagrams are anatomically incorrect, as they do not exhibit the divergence of the vagina and rectum, but at a certain point

¹ Savage, on Female Pelvic Organs, London, 1870.

² Thomas, Diseases of Women, 4th Ed., Philadelphia, 1874.

³ Op. cit., page 126.

rather show the rectum to be a straight canal. It is not necessary for the purpose of this paper to reproduce the diagrams of Thomas or to accompany it with anatomically correct ones, as reference to the profile view of Fig. 1 will suffice.

It is not an uncommon thing for some physicians with large obstetrical experience to assert that they have had no cases of perineal rupture; these gentlemen may have been so fortunate as not to have had patients with complete laceration. The writer, however, has had many cases of previously unrecognized incomplete laceration of the perineum among the patients of practitioners who have made similar statements to him. This is not strange when we consider that laceration to a certain extent is with very many women an inevitable occurrence, and that slight tearing is not easily recognized at the time of its happening, and further that the bad results of partial destruction of the perineal body are not apparent until, as a consequence of it, there ensues dislocation of one or more of the pelvic organs. It may be months, but more frequently the time is measured by years, that dislocations of pelvic organs as a sequence of incomplete laceration produce their discomforts and sufferings.

All lacerations of the perineum may be classed under the general heads: complete, and incomplete or partial.

Reversing the order in which they have been alluded to, I would mention first that of the incomplete variety, which includes all, from a slight tearing of the fourchette to a rupture of the perineum, not including the sphincters; the common results are the same in character, while differing only in degree. These results may be mentioned as retroversion of the uterus, prolapse of the uterus, rectocele, cystocele, and impairment or utter destruction of the sphincteric action of the ostium vaginæ. The vaginal walls descend, and as they are thus displaced, the process of involution which they normally undergo is interfered with, the circulation is impeded, and they become flabby from these pathological conditions. The uterus, which is grasped by the superior portion of the vagina, cannot retain its normal position, and hence some form of displacement ensues. Sometimes the anterior wall of the vagina descends farther than the posterior wall, and the bladder is dragged down and in this way a cystocele is formed. In

other cases it is the posterior wall, and a rectocele is formed or produced. This last will the more readily occur when the subjects are habitually constipated.

It is important to bear in mind that subinvolution of the vagina is a factor in the production of chronic pelvic disorders, second only to subinvolution of the uterus. These two conditions are not unfrequently associated, and when they are, and the perineal body is in part or wholly destroyed, the reason cannot but be obvious why disorders of function, structure, and place of the uterus and contiguous organs occur as a sequence. It is not uncommon to find a child-bearing woman with what seems to be externally a perfect perineum, but there is sagging of the vaginal walls, and only the integumentary portion of the perineum is sound, while the perineal body is almost or entirely wanting. It is this class of cases that mislead the casual observer as to the real pathogenesis of many pelvic disorders. Complete laceration is a much more grave affection, for besides the troubles incident to incomplete laceration, there are the additional ones arising from rupture of the sphincter ani muscles. A woman with rectal incontinence is truly afflicted, exciting our pity, for not only is she a physical sufferer, but in consequence of her condition she is frequently deprived of all the pleasures of social life. The diagnosis of complete laceration of the perineum needs no remarks, as nothing can be easier, but when incomplete, the task is much more difficult. The absence of a portion of the perineal body can best be determined by conjoined examination of the vagina and rectum.

The facility with which the vagina can be everted by a finger in the rectum, and the degree of uniformity in the thickness of the septum indicate loss of substance and the extent of it; further, with the patient upon her back, if the anterior and posterior vaginal walls are not in close apposition, but there seems a tendency for the lateral walls to approximate, then there can be no mistaking the existence of partial laceration. This is still more manifest by an examination with the patient in an erect attitude, for in this position there seems to be a redundancy of vaginal walls and they descend in folds, large or small, proportionate to the extent and age of the laceration, dragging with them the uterus and bladder,

and sometimes the rectum. An ocular examination of such a vagina reveals more or less obliteration, and sometimes an entire absence of transverse rugæ in the posterior wall, and sometimes cicatrices are apparent.

In many cases there is also an entire absence of sphincteric action at the ostium vaginæ. In some vaginæ, naturally capacious, the bladder pushing before it, the anterior vaginal wall forms a large cystocele which may even protrude at the vulva. With such a condition of things there will be an absence of transverse rugæ in the anterior vaginal wall; this absence is occasioned by the subinvolution, or the constant tension to which the walls have been subjected, or both. The long continuance of a vaginal cystocele produces, in addition to the discomforts attending a displaced uterus, an irritable condition of the bladder. The prolapse of the bladder admits of a pocket for the retention of urine; the urine thus retained undergoes chemical changes and acts as an irritant to the mucous membrane of the bladder and urethra, and sometimes causes one of the most intractable and annoying forms of pelvic disorders.

It is true that there may be a condition of things favoring the formation of rectocele and cystocele other than laceration of the perineum, such as subinvolution of the uterus, pressure of the abdominal organs, increased by excess of adipose tissue in the abdominal walls, by heavy skirts and tight lacing, all of which are greatly aggravated by the common pernicious habit of constipation, and of not voiding the urine at proper intervals. If any of the causes just mentioned should exist, which might be designated as predisposing, and there should be a laceration of the perineum to a greater or lesser extent, then cystocele is quite an inevitable sequence, for the reason that the posterior vaginal wall, curving forward and composed of resisting material, is in reality the support of the less firm anterior wall; if the latter has not an adequate foundation upon which to rest, it then falls lower in the vagina. Another feature of these displacements of the pelvic organs consequent upon complete or incomplete lacerations of the perineum is the effect upon the uterus. The uterus descends low in the pelvis, being in many cases a heavy, subinvolted organ, with its venous circulation impeded by reason of the displacement, the neck is in a condition to become easily abraded, as it usually

does, and then a profuse leucorrheal discharge is poured out which adds still further to the relaxed and sodden condition of the vagina.

These changes in the uterus are alone sufficient to render a woman's life miserable, and produce all those local and sympathetic disorders recognized as belonging peculiarly to diseases of the female generative organs. Very much might be added in this connection of the far-reaching effects upon body and mind produced by laceration of the perineum in its various degrees, and yet it would not come within the strict province of this paper.

The gentleman whose guest we are to-night, has in unmistakably plain and well-chosen words given to the profession a valuable paper, showing the mental and psychical disorders which the simpler varieties alone of perineal laceration produce.¹

TREATMENT.—I do not wish to underrate the value of perfectly adjusted pessaries in the treatment of displacements of the uterus. It is an undoubted fact that, by holding the uterus in its normal position, they favor its involution after parturition; they also prevent, to a great extent, either active or passive congestion of its tissues; they may also serve to prevent descent of the vaginal walls. But where a portion of the perineum is destroyed, it is sometimes difficult or impossible to make a pessary accomplish what we desire; if, however, we succeed in holding the uterus and pelvic organs in their normal position with one, it does not cure the trouble, and serves only as a temporary measure. With the removal of the pessary the organs are again displaced. Besides, it is a foreign body liable to get out of position and produce irritation or even serious inflammation. No physician skilled in the treatment of diseases of women is willing to insert a pessary and allow the patient to pass from his observation, as he well knows the troubles to which it may give rise. We cannot here discuss the advantages and disadvantages of pessaries or say a word about the numberless kinds and patterns. While one would not willingly dispense with them in the treatment of uterine diseases, it is not well to expect too much of them.

¹ Prof. Thad. A. Reamy. Upon the Simpler Varieties of Perineal Laceration. A paper read at the meeting of the American Gynecological Society, held in Boston, in 1876.

Of their use in the treatment of partial perineal laceration it may be well to make merely an allusion. A pessary, if it is perfectly fitted (none other should a physician allow to be worn), may in a case of incomplete rupture afford such perfect relief for a time that the patient feels as if she were cured, but it cannot restore what is lost, nor cause a new perineal body or a portion of one to come into existence. Neither is it a pleasant thing for a woman to contemplate the necessity of wearing a pessary during a long period of years in order to insure her any degree of comfort. There is to my mind but one means of radical cure, and that is by an operative procedure. There cannot be any question about the propriety of an operation for complete laceration of the perineum, and in the entire domain of gynecological surgery there is no operation, when properly performed, that is more uniformly satisfactory. But surgeons may sometimes hesitate to operate in the partial lacerations, and more especially in the class I have spoken of, that are so liable to remain undetected. One cannot but recognize the fact that the impetus given by many of the pioneers in uterine surgery, by reason of their brilliant achievements, has of late years had a tendency to make the surgical part of gynecology occupy rather too prominent a position, and cause to be neglected medical and psychical considerations in the treatment of women's diseases. My distinguished friend, Prof. Fordyce Barker, in his advocacy of the importance of medical gynecology, has truly said: "The sole justification of any operation which involves suffering and danger to the subject must be the strong probability, based on scientific knowledge, that compensating good will be the result."¹

Entertaining the same views, I should be very loth to advocate such an operation as I propose, if it was attended with any particular risk, or even if there were slower and more conservative means of cure. My belief concerning the propriety of a plastic operation to restore the vagina to its normal condition in partial laceration, where there is any displacement of the pelvic organs, or discomfort as a consequence,

¹ Medical Gynecology. Annual address delivered at the meeting of the American Gynecological Society in 1877, by the President, Fordyce Barker, M.D., LL.D.

is not based upon the observations of two or three cases, but upon a large number occurring in both hospital and private practice. So I can truly say, that within my own experience, the operation has proven as satisfactory as the one for extensive laceration. There are, of course, many patients who could be relieved by an operation, but who will not submit, and then it merely remains for the physician to treat them by pessaries, or such means as he deems best.

I have myself operated upon the perineum and vagina to remedy the laceration produced by parturition, by all of the published methods, unless it be the one described by Demarquay, which seems to me a needlessly complicated one. An important desideratum in connection with any surgical procedure is that it shall be as simple as possible. For the past five years I have operated by what is deemed a simple and easy method, and in the class of cases more particularly under consideration, there has not been a single instance of failure.

The operation of perinorrhaphy is fully described in every modern work that treats on the surgical diseases of women. Ancient writers speak of it, but only in a vague sort of a way. Ambroise Paré is credited with being among the first to suggest it; but he gives no description of his mode of operating, more than to describe a simple stitching up of the perineum at the time of rupture, and even of this he says that it is "*un grand désastre à la pauvre femme*" on account of the cicatrices, which render it necessary, if the woman becomes pregnant again, to cut the perineum when she is delivered, lest it be torn, as he adds he himself has done twice "*en cette ville de Paris.*"¹

Guillemeau,² the pupil and successor of Paré, is believed to be the first writer to describe the secondary operation, which he performed successfully six weeks after childbirth in a case of complete laceration. The same method was pursued by him as in operations for hare-lip.

In the nineteenth century, the operation has been revived, and there have been many modes described, all having in view an accomplishment of the same thing. All of these described operations have been with reference to more extensive lacerations.

¹ Œuvres Complètes d'Ambroise Paré, par J. F. Malgaigne, Paris, 1840.

² Les Œuvres des Guillemeau, p. 354, Paris, 1612.

tions than those of which Prof. Reamy¹ has written, and for which, in his opinion as in my own, the same necessity for operating exists.

The performance of perineorrhaphy is essentially the same in one variety of laceration as in another, with the exception of the additional means made use of when any portion of the recto-vaginal septum is torn, and although prominence has been given, thus far in this paper, to incomplete lacerations, it has been rather because of the results proceeding from them than from any marked difference in the treatment of the different forms. Therefore, the remaining portion of this paper will be upon perineorrhaphy as it relates to any or every variety or degree of laceration to which the perineum is subject.

Previous to operating, the patient's general health should be made as good as possible by hygienic or therapeutic means, and then the time selected for operating should be a week or ten days after a menstrual period. The bowels ought to be thoroughly emptied by a cathartic twelve hours before the appointed time for operating, and an hour before, the rectum should be washed out by a copious injection of warm water. The patient being etherized, I begin by nicking with scissors the anterior margin of the surface to be denuded, at the juncture of integument and mucous membrane; next, I introduce two fingers of the left hand into the rectum, while assistants hold the labia apart, it being important that they are held uniformly tense. I use scissors slightly curved and sharp pointed (Fig. 2) to denude

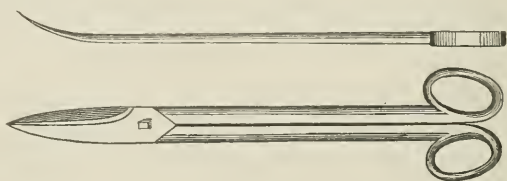


FIG. 2.

the mucous membrane. I use neither tenacula nor tissue forceps, but, with the parts tense, snip a hole in the mucous membrane in the median line, close to the integument, and then inserting the scissors with a cutting motion into the small hole made, I continue to dissect the mucous membrane away from the subjacent tissues without removing the scissors, first going

¹ Op. cit.

up the septum as far as is desired, and then laterally, first on one side, and then on the other, without removing the scissors or once bringing their points out from beneath the mucous membrane, as shown in Fig. 3.

Sometimes, instead of beginning my dissection at the median line, I begin at the nick on the left labium majus, running the points of the scissors beneath the mucous membrane, and dissecting it away from the subjacent tissues back on the left lip, then up the recto-vaginal septum as far as I deem it necessary, and from thence forward on the right lip to a point opposite from which I started (marked by the nick), without allowing the scissors to come out from beneath the membrane, unless they are accidentally turned out by cicatricial tissue.

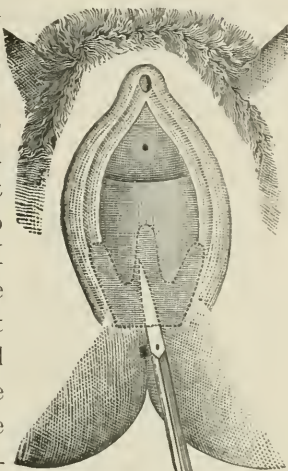
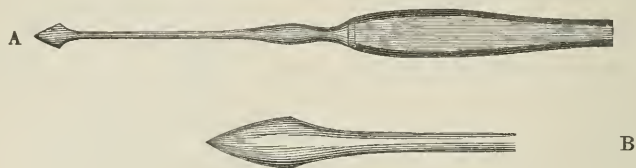


FIG 3.

Then with blunt-pointed scissors cut away the dissected flaps. The bared surface thus exposed is much the shape of a right-angled triangle, with the base directed outward, or it has been compared in shape to a butterfly, with wings spread and tail directed upward.

The advantages of this mode of denuding are, (*a*) the rapidity with which it can be done; (*b*) the absence of hemorrhage in the vagina, as no blood escapes except at the locality where the scissors enter beneath the mucous membrane; (*c*) the ability by which the operator can make complete denudation, as the discoloration beneath the membrane marks the route the scissors have taken. Several of my brother gynecologists have tried this method of denuding, and are highly pleased with it. Among them is my friend Dr. Albert H. Smith, of Philadelphia, who, thinking he could better denude with a knife than scissors, had one made, which he found after several trials to be a very satisfactory instrument, by which he can denude much more rapidly, and yet on the same principle as with scissors. The knife (Fig. 4) has a dart-shaped thin blade with double cutting edges. The patient,

when the knife is used, is put in the same position, and with the same degree of tension of the parts as for scissors; the knife is inserted beneath the mucous membrane in the median line, at its juncture with the integument, and from thence

FIG. 4.¹

the sub-mucous incision is made on one side, then upon the other, then up the septum the required distance, after which the flaps are cut away with blunt-pointed scissors. I have, up to the present time, used the knife devised by Dr. Smith only three times, and although, as a rule, having preference for the scissors over the knife in all plastic operations, I have been delighted with the rapidity and ease by which I have been able to operate with the knife which he kindly sent to me.

As there are many surgeons better skilled in the use of the knife than scissors, the instrument devised by Dr. Smith cannot but be acknowledged as a valuable addition to the gynecological armamentarium.

The next step in the operation after denudation is the adjustment of sutures. In cases of complete laceration, or when any portion of the septum is torn, no method can be better than the one described by Dr. Emmet for bringing the lacerated portion of the septum together. Having done this in the class of lacerations just mentioned, the remaining sutures are put in as in incomplete lacerations, so that, with the exception of this procedure, sutures in every instance are adjusted similarly, and after the following manner. A long, slightly curved needle, fixed in a handle, is threaded with silk, to which is attached silver wire of large size, or if the needle has an eye sufficiently sunken, the wire may be put in it. The needle is then inserted in the left recto-iliac fossa, a little back of the anterior margin of the anus, while at the same time the left index finger is put into the rectum to help guide the needle which is carried deep

¹ A represents the appearance of the knife, about one-third of its size. B shows the shape and full size of the blade.

through the septum to the median line just above the denuded surface within the vagina; by means of a tenaculum the suture is then pulled from the needle, the latter being withdrawn empty. The empty needle is then inserted on the opposite side, carried through the septum in the same manner, and brought out in the vagina at the same location as at first. The needle is then re-threaded within the vagina and withdrawn, the wire having made the circuit with no part visible except the ends.

A second suture is then put in in the same manner, starting the needle about one-half of an inch anterior to the first and passing through the median portion of the septum a little above it, and bringing the needle out at a corresponding point on the opposite side. A third suture is put in anterior to the second, and sometimes a fourth, but neither of these is carried into the septum. As the first and second sutures are the important ones, the wire should be larger than the others, and for material silver is more reliable than anything else. I have used iron wire silvered, but unless recently plated it is liable to break and defeat an otherwise successful operation. To secure the sutures after the nates are brought together, one should make sufficient traction upon the first suture to bring the parts into perfect apposition, and then slide upon the wire a perforated shot, which is then compressed, and after being twisted another shot is put on and compressed to guard against all danger of slipping from coughing or vomiting. The second suture should be treated in like manner, but the remaining sutures require only a single compressed shot, or the wire may be twisted. With the limbs well secured, the operation is then complete. As the denuded parts have been compared in shape to a butterfly with spread wings—the traction, if just sufficiently made, brings the pared parts together like doubling a butterfly's wings over its back and then fastening them. The wire possesses, in one respect, a great advantage over silk, or any form of suture, in that it serves as a splint to hold the parts in proper position.

In cases where there is marked redundancy of the vaginal walls, and they lie in folds, there is more to be done than simply restoring the perineum.

Reamy's method is to denude a number of parallel strips up

the recto-vaginal septum, and bring the edges together by fine silver sutures. My own method is, instead, to denude one broad portion of the septum, from an inch to two inches in length, or such a distance as I deem requisite, as indicated by the absence of rugæ. For bringing the edges together I have used fine silver wire; but it is very objectionable, on account of the difficulty of removal without injury to the perineal wound. The same may be said of silk, although I have, in a few instances, used sutures of Chinese silk, and made no attempt at their removal—perfect union occurring—while the silk either decayed through and was cast off, or else was absorbed. *Theoretically*, catgut is the best material; but *practically*, it has proved in my hands a failure, when reliance has been placed upon the ordinary knot remaining tied.

If two operations are made, one for the redundant walls, and another for absence of the perineum, then, if made in the order above named, there is nothing better for sutures than silver; but a more common and better plan is, to have but one operation. As this is an important step, where there is much prolapsus vaginæ, it is necessary that a plan be adopted of putting in sutures and removing them without interfering

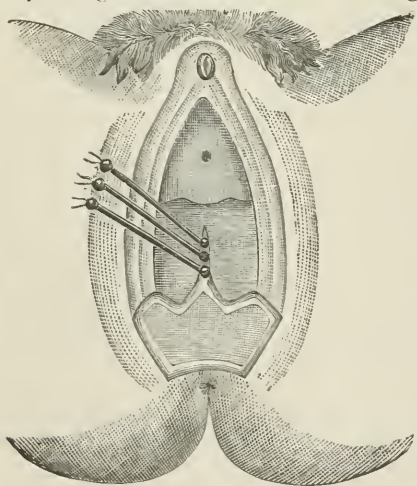


FIG. 5.

with the firm and perfect union of the perineum. The plan I have adopted is as follows: After denuding the recto-vaginal septum above the point reached by the deep perineal suture, such a distance, and such a width as is deemed requisite, the sutures are put in transversely about three to the inch. For the accomplishment of this part of the operation, I take fine catgut and slide down upon it a No. 2 perforated shot, but do not compress it; then following that a piece of vulcanized rubber tubing two and one-half inches long (a No. 1 or 2 English

male catheter, cut into sections of the same length, does well for the purpose), at the end of which I put upon the catgut another shot, which is firmly compressed. About three or four sutures inserted in this way are ordinarily required for remedying the redundant posterior vaginal walls, all of which are adjusted as just described, and then left to protrude beyond the vulva, as seen in Figs. 5 and 6. Fig. 6 also shows the perineal sutures adjusted, only none are double-shotted as should be shown in the two posterior sutures. The object of the loose shot and tubing is to make easy the removal of the sutures, as by simply cutting the catgut on one side the remaining portion can be easily drawn out without disturbing the feebly-united perineum.¹ I have tried this plan with silver, but with very unsatisfactory results, owing to the difficulty in removing sutures of this material of the required length, and the liability of their tearing the wound apart.

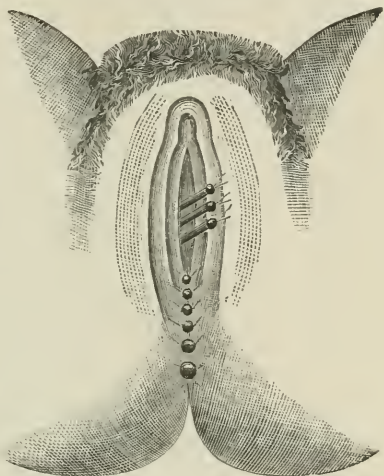


FIG. 6.

In the after-treatment of these cases, I think mistake is often made by washing out the vagina too soon. It should not be done earlier than forty-eight hours after the operation. The most grateful wash is a weak solution of permanganate of potash. The bowels should be kept constipated as a rule, although the opposite or causing them to move twice or three times a day meets with the approval of many gynecologists. A diet which affords but little excrement should be prescribed. About the eighth or ninth day the metallic sutures should be removed, reversing the order in which they were inserted. The patient should not be allowed to sit up before the fourteenth day after the operation, nor walk about under three weeks.

Occasionally we meet with patients where an operation to restore the perineal body and diminish the redundant posterior

¹ It not unfrequently occurs, if small-sized catgut is used, that the portion beneath the tissue is absorbed. Union is then secured, while there is no trouble in removing sutures.

wall will not suffice. This is particularly the case when there is a large cystocele of long standing; the mere restoration of the posterior vaginal wall and perineum not being sufficient, it becomes necessary to perform a plastic operation upon the anterior vaginal wall. The necessity for such a procedure should be determined upon, if possible, before an operation in the perineal region is made; this can be done either by bringing the posterior commissure together by the hands, or, as I have sometimes done, by catch-forceps or *serrefines* in the vagina, and externally upon the perineum, thus temporarily

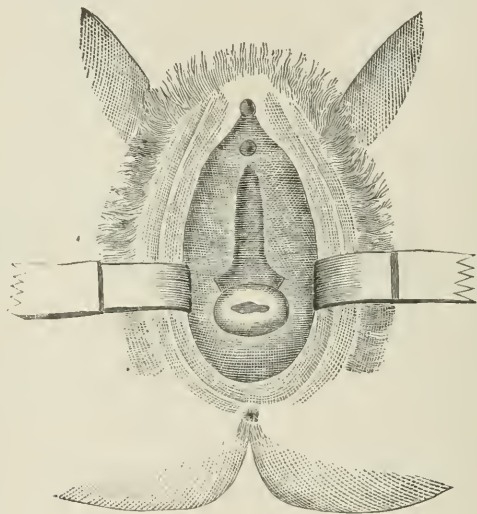


FIG. 7.

restoring the parts, and then ascertaining if, when the patient stands, the cystocele persists in protruding and the uterus in descending. The dissecting of a V-shaped piece of mucous membrane from the anterior wall, and bringing it together by sutures, after the method of Emmet, will suffice in some cases; but experience has taught me that in the majority of cases it is of no permanent value, and that a better mode of diminishing the redundant anterior wall, holding up the uterus, and reducing the cystocele is by denuding the parts more in the shape of a capital letter **T**, the arms of the letter being located superiorly at the junction of the vagina and cervix uteri (Fig. 7). Then the pared edges are brought together by six or eight fine silver sutures transversely and about the same num-

ber longitudinally, as represented by Fig. 8. The sutures can be removed in seven or eight days, and in from ten to fourteen days after, the posterior wall and perineum should be operated upon in the manner described.

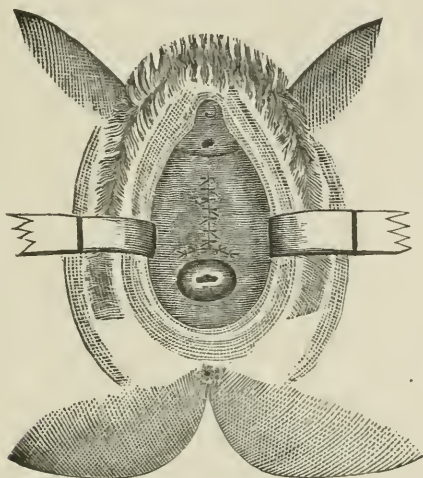


FIG. 8.

It is important that the last-named operation should not be delayed long after the first, as, otherwise, if the patient walks about, the yielding anterior wall, crowded down by the viscera above, and lacking the resisting power of a normal perineum upon which to rest, will gradually descend, and the advantages which might have been gained will be in a great measure or entirely lost.

84 LaFAYETTE AVE., DETROIT, MICHIGAN.

FRACTURE OF THE PELVIS DURING INSTRUMENTAL DELIVERY,
WITH AN ILLUSTRATIVE CASE.

BY
W. H. STUDLEY, M.D.,
New York.

WORKS on surgery and obstetrics are more or less replete with the details of deformities of the pelvic bones and their consequences in regard to their causal relationship with dystocia; but, as bearing on the subject under consideration, it is

only necessary to refer to those connected with pelvic fractures and morbus coxarius. The causes of dystocia in consequence of fractures are mainly due to displaced bones and the formation of callus. Spiegelberg, in his *Obstetrics*, Vol. II., page 498, says: "Fractures of the pelvic bones, although generally fatal on account of the simultaneous injuries of important organs, may heal with so much deformity and with so strong a callus that the remaining displacement of the bones, as well as the projecting callus, considerably narrows the pelvis. A number of these rare cases have been collected by Lenoir. (*Difformités du bassin par cals difformes, etc.* *Arch. Gén. de Méd.*, Jan., 1859). Naegele-Grenser has other cases. In Barlow's case the os pubis was fractured and the callus so voluminous as to reach to 1.5 cm. of the promontory. Laparotomy after rupture of the uterus saved the patient. In the Musée Dupuytren there is a pelvis without history, the acetabulum of which is shattered and so united that the callus projects 4 cm. into the pelvic cavity. The anterior portion of the pubic bones is dislocated inwards."

Tyler Smith, in his *Lectures on Obstetrics*, page 499, says: "The rarity of fractures of the pelvis in women is compensated for, if the expression may be allowed, by the fact that they are generally attended with permanent displacement or other results which tend to diminish the capacity of the pelvis. The deposit of callus which takes place would appear to be very erratic, and to have a tendency to encroach upon the cavity of the pelvis. Dr. Lever met with a case where there was a bony projection of more than an inch into the pelvic cavity, in consequence of a fracture of the acetabulum; and Burns relates a case where a similar ossific formation resulted from a similar injury, the projection being two inches long."

Hamilton on *Fractures*, page 344, gives an account of a man who fell some thirty feet and fractured the acetabulum; he recovered in eight weeks and was able to walk almost as well as ever. He subsequently died of disease of the chest, and dissection revealed a fracture running in two directions through the acetabulum, an extensive comminuted fracture of the ilium, and three fractures of the os pubis; the repair was complete, with little or no deposit of bone in the acetabulum, but an abundant deposit of callus around the other parts of the frac-

tured bone. I only mention the case as illustrating the great tendency to the formation of callus in pelvic fractures, and the way it conduces to dystocia when occurring in the female.

It is quite important to decide what the peculiar features in pelvic fractures are, which in some instances tend to a fatal issue, and in others to a favorable one.

Erichsen, page 221, says: "In fractures of the pelvis the danger depends not so much on the extent of the fracture as on its complication with internal injury, and the violence with which it has been inflicted." "In fractured pelvis, the principal sources of danger arise from injury to the bladder and urethra, with consequent extravasation of urine; from laceration of the rectum or fracture of the acetabulum."

Hamilton, speaking of fractures of the pubis (*l. c.*, page 338), says: "The danger in these accidents consists not so much in the fracture as in the injury done to the bladder and other pelvic viscera. If the bladder is opened into the peritoneal cavity, death is almost inevitable, and even when the urethra and bladder have suffered laceration lower down, or at any point above the deep perineal fascia, extensive urinary infiltrations, followed by abscesses and gangrene, generally expose these patients to the most imminent hazards."

These statements are fully verified by cases cited from Sir Astley Cooper, Lente, Hall, Malgaigne, Clark, Marat, Cappelletti, Whittaker, and others. In the same author's account of the fractures of the ischium, ilium, sacrum, and acetabulum—and the cases mentioned as illustrative—the dangers to the patient are shown to be proportionable mainly to the wounding of the urinary organs, the rectum, the peritoneum, or the other soft parts; and, *per contra*, the immunity from an unfavorable result is shown to be due to exemption from the woundings of such viscera.

The literature of pelvic fractures would indicate that, in almost every instance, their causes are external direct violence. In regard to such accidents arising from internal violence, I have been able to find but few accounts, and those are exceedingly meagre.

Bedford (*Principles and Practice of Obstetrics*), speaking of the danger of forceps delivery, limits himself to this statement, "Instances are recorded in which, especially where there

was slight contraction, the bones of the pelvis have been fractured by the amount of force employed."

Hamilton, in his paragraph on fractures of the ischium, confines himself to this simple sentence: "Perhaps the most remarkable instance is that mentioned by Marat, as having occurred in a female during labor." Inasmuch as Marat is inaccessible, I am unable to give the history of that remarkable instance. I infer that the accident alluded to by these authors was limited to what might very naturally occur as a consequence of too much leverage action of the forceps, viz., a fracture of the pubic or ischiatic rami. I am unable to learn of an instance in which the bony pelvic ring has been completely severed by fracture as a consequence of dystocia, whether left to nature or complicated with manual or instrumental interference. It is exceedingly doubtful whether the *healthy* bony pelvis can be completely parted by fracture, under even a somewhat violent and reckless management of instrumental delivery, while it is quite conceivable and quite probable that such an occurrence might ensue, even under a judicious use of the forceps, where the bones have been weakened by disease.

Let us now inquire into the relationship which hip-disease holds with deformities of the pelvis, and hence as such with dystocia; and also as regards its effects upon the bony structure. Erichsen divides hip-disease into the arthritic, the acetabular, and the femoral varieties, according as the soft structure of the joint, the acetabulum, or the head of the femur is principally or primarily affected. The acetabular form of the disease is the most fatal, and tends sooner or later to death, in consequence of the ravages which it makes in the intra-pelvic space in the form of abscesses. The arthritic form is perhaps the most painful and acute in its nature, but is disposed to complicate the femoral variety, and practically, so far as remote effects are concerned, it may be identified with that form of the disease. The femoral variety is of special interest in that it is that form of the disease which far oftener than the others conduces to change of the pelvic bones. It is this form which especially disposes to dislocations, because of the destruction of the head of the femur, and the filling of the acetabulum with fibro-plastic deposit. If it remain within the socket, the

leg is frequently shortened, in consequence of the absorption of the head of the femur. In both cases the leg becomes shortened as a natural consequence—an important element, as we shall see in the modification of the natural form of the pelvis. The shortening of the limb is also contributed to by its general atrophy consequent upon disease.

How does this state of things affect the normal pelvic conformation? In the incipient stage of morbus coxarius of whatever variety, the leg is instinctively lifted from the ground to guard against the infliction of pain. In this act the pelvis is tilted into the oblique position, wherein the affected side is highest; this, of course, throws the antagonism between the weight of the body on the one hand, and the supporting sound leg on the other, into a line forming an angle with the pelvic axis, proportionable to its obliquity. If the disease begins in early life, and, in consequence of the destructive processes above mentioned, continues up to or beyond puberty, necessitating almost the exclusive use of the sound leg, and the disuse of the diseased one, such a condition is calculated to result in flattening or depression of the pelvis on the sound side, and a corresponding or compensating curvature taking an oblique direction on the other.

Spiegelberg (l. c., page 476) says: "Should one leg in consequence of coxitis be unfit for use, the other or normal side will have to bear an abnormal pressure, and the oblique contraction will be found on the side not affected by a pathological process."

Cazeaux (Midwifery, page 556) says: "Persons affected with chronic disease of one of these limbs, and therefore under the necessity of walking with crutches and of bearing the whole weight of the body on the sound side, incur the same danger" (referring to a depression of the pelvic bones).

But, as already implied, this result is conditional; the disease must begin while the bones are yet in a process of development, and its ravages must entail long-continued disuse of the affected side. On the other hand, if it run a comparatively short career, and the patient is able to resume the use of the limb in locomotion, the result is quite contrary.

Spiegelberg (l. c., page 476) says: "If the shortened leg should be used, the oblique contraction will be found on the

primarily affected side, because in this case the upper part of the body bends over to this side in standing and will be thrown upon it in walking with a certain amount of power."

Cazeaux (l. c., page 556) says: "It is further possible that a shortening of one of the legs, whether resulting from a fracture a luxation, or an atrophy of the limb, may produce the same result (meaning a thrusting in of the pelvis on the affected side), more especially if these accidents take place in early childhood, when the pelvis is still far from having acquired its full development."

But such a termination is not altogether due to the peculiar use to which the limb on the affected side is put in standing and walking.

Spiegelberg (l. c., page 476) says: "This side, besides showing the effects of the primary disease, will be contracted and too small, if not obliquely distorted, being impeded in its development by the inflammatory sclerotic process. We find the os innominatum kept back in its growth in every direction, the ramus longitudinalis, crista pubis and tuber ischii atrophied, etc."

Tyler Smith¹ says: "At the time of puberty, we have the three permanent articulations of the true pelvis, viz., the two sacro-iliac synchondroses, and the symphysis pubis. We have also the Y-shaped triple articulations between the ilium, ischium, and pubis on each side. These make in all nine articulations and seven separate bones for the true pelvis. These bones all grow from the centre to the circumference, and it is to this circumferential increase, taken collectively, that the expansion of the pelvis at puberty is attributable. It is not a little remarkable that the divisions between the ilium, ischium, and pubis should remain until after the completion of the development of puberty. The capacity of the pelvis must very much depend on the period at which the junction of these bones takes place. When ankylosis takes place between the sacrum and ilium before the period of puberty, the circumferential increase of the aspects of the sacrum and ilium engaged in the articulation is impossible. Hence the arrest of growth on the ankylosed side of the pelvis upon which the oblique deformity depends." "It is probable that, when this

¹ L. c., pp. 559 and 600.

consolidation and the obliteration of the **Y**-shaped articulations take place early, we have in some cases the infantile or equally contracted pelvis."

Although the above paragraph contains no direct allusion to the effects of morbus coxarius on the bony pelvis, yet it is impossible not to draw the inference therefrom that any pathological condition of the hip-joint, involving its integrity to the extent that the latter disease usually does, especially in early life, is very naturally calculated to arrest development, and, in combination with other forces, to produce deformity.

With these brief considerations of the subjects of pelvic fracture and morbus coxarius in the female, in some respects directly and in others indirectly bearing upon the nature of a case in my practice, I will now present it in detail. It is one of fracture of the pelvis, occurring during instrumental delivery in a subject affected with hip-disease beginning in early life.

Mrs. P. at the present time is between 30 and 31 years of age. Her usual weight for the last ten or twelve years has been in the neighborhood of 150 pounds. When about eight years of age, up to which time she was a very healthy child, she received an injury of the right hip by a fall. Shortly afterwards she experienced pain in the knee, and ultimately had to take to her bed. The case was pronounced hip-disease, and treated as such by issues and rest. Under this treatment she partially recovered, and for some nine years, although able to get around on a shortened and limping leg, she suffered much, and was but indifferently well. At this time an abscess formed for the first time a little below the trochanter major. It was opened, discharged for some months, when she went under Dr. Davis' treatment, with his extending and counter-extending splint. Under his treatment she greatly improved, and finally was able to throw aside her appliances. Some three years after the first abscess, another formed, and I opened it. The discharge soon ceased. Some two years afterwards she married. For some five years afterwards, the husband was unable to accomplish perfectly the sexual act, in consequence of the great adduction of the right thigh towards the median line. He consulted me in reference to the matter, and wished me to make an examination of his wife, to learn whether anything was wrong with her genital organs. With her ready consent I did so, and found them in normal condition and well developed. But, in consequence of an almost ankylosed condition of the hip, and the great adduction of the thigh, I could perfectly understand the obstacle which the husband had to encounter when attempting copulation in the usual way. Somewhat jocosely, I suggested that he attempt the act canine fashion. Without a thought further in regard to the matter, and when the

subject had passed entirely out of mind, two months afterwards he called at my office to inform me that my suggestion had resulted in a perfect success, and that his wife was enceinte. I now began to feel an unpleasant responsibility for the consequences of my thoughtless and hasty hint. Although given without any reference or view to progeny, I felt none the less that I had neglected a physician's duty in not speaking of the possible and probable unhappy results which might follow.

As gestation proceeded I had a curiosity to learn the exact condition of the bony pelvis, and hence sought and obtained digital and inspectional examinations on several occasions. These revealed the fact that the ramus of the pubis on the diseased side was more perpendicular than its opposite fellow, and that its body appreciably encroached upon the normal pelvic cavity. I could make out no antero-posterior shortening. The health of the patient was excellent from first to last of gestation. My hopes, based mainly on this fact, were that all might turn out well. Nevertheless I prepared for trouble. The line of action marked out by me was to let her go on to full term, and when labor should begin, to put her under the influence of chloroform and make a thorough manual examination of the pelvic capacity. If I should find little or no appreciable deformity, Nature would of course be permitted to do her perfect work, aided perhaps, if necessary, by the forceps. If I found deformity to such an extent as to admit of no probability of bringing a living child through the natural channel, I then would fall back upon one of two sources, viz., embryotomy or laparo-elytrotomy, ruling out the Cesarean operation under the conviction that Thomas had laid it upon the shelf. To meet these several possibilities I engaged Dr. J. R. MacGregor to be with me when our services should be needed. I also, in view of the possibility of the operation of laparo-elytrotomy, called upon Dr. T. G. Thomas to obtain his services in case it should be decided to perform it, and that gentleman generously consented to be with me if he were needed, at any hour of the day or night. In doubt as to the limit of the claims of embryotomy on the one hand and Thomas' operation on the other, I wrote to Dr. Thomas for information on this point. Of course, it was clear that an extreme deformity of pelvis should decide in favor of laparo-elytrotomy. But the question occurred to me, Suppose I find a pelvic condition which, while it might possibly admit of delivery by means of embryotomy, yet would so far subject the patient to dangers as to call for apprehension and anxiety, would laparo-elytrotomy in such a case be justifiable? In consequence of Dr. Thomas' absence from the city I received no answer to my communication and so was left to my own resources.

On the 4th of June, at 10 A.M., at the full term of gestation, I was called to my patient to find her in labor. I immediately summoned Dr. MacGregor, who kindly gave up important business and responded to my call. He administered the chloroform and I proceeded to make a manual exploration. I succeeded in passing

with difficulty my hand, closed fist-form, between the pubis and the promontory of the sacrum, pushing up the gravid uterus as I did so. The transverse pelvic diameter seemed not of the normal length, and I found that the pelvic brim on the right side (the diseased side) was straighter than it ought to be. The pubic ramus on the corresponding side was less arched than its fellow. Dr. MacGregor made a digital examination, and so far as he could judge, thought the pelvis to be as I had found it. Our conclusion was that it was a case which, as a first procedure at least, ought to be relegated to the trial of the forceps. But inasmuch as dilatation was not sufficient for such an undertaking at present, we left to meet at 1 P.M. At this hour, we found that pains had continued and dilatation had made progress. Determined to let Nature take her course as far as admissible, we decided to wait until 5 P.M. At this hour, we found the patient somewhat exhausted; os dilated to two or two and a half inches, and dilatable. We concluded to rupture the membranes and apply the forceps. Dr. MacGregor chloroformed the patient and I proceeded to apply the instruments. They were adjusted without difficulty. In consequence of the peculiar angle which the pelvis makes with the spinal column in cases of long-standing hip-disease, the patient had to be moved so far towards the edge of the bed as to permit the buttocks to project over its edge, in order to allow the handles of the forceps to conform to the line of the axis of the brim of the pelvis. With the feet and legs held by two strong female assistants and with myself upon my knees on the floor, tractions were made downwards, and, as far as could be judged, in the line of the pelvic axis, at short intervals, until I became exhausted. I thought that I had brought the head down to the extent of an inch of the cranial segment below the superior strait. Dr. MacGregor and I now exchanged places. He continued his efforts until exhausted, but felt that they were crowned with the success of a decided descent of the head. When again we exchanged places I certainly could confirm his opinion. I again set to work and continued for at least twenty or thirty minutes, but after becoming completely tired out in my efforts, and perceiving that I had made little or no progress, I expressed the opinion that we would have to resort to craniotomy. He thought that he would like to make one more effort with the forceps. Shortly afterwards, when he was making powerful tractions, I heard two distinct smothered snaps. I remarked, "Doctor, have your forceps slipped?" He answered, "Something has given way;" and being exhausted, called me again to the work, remarking that he thought the head had made a decided descent. As I proceeded to examine the situation of things, my hand came in contact with a sharp projecting bone. I at first thought that it was a fractured cranial bone, but upon closer examination found it to be the pubic ramus of the right side. Passing my finger into the vagina, I found the head quite low in the pelvis, and exploring in the region of the pubis, I found that its body could be moved forward. The pubic synchondrosis seemed undisturbed. Under the circumstances we concluded that

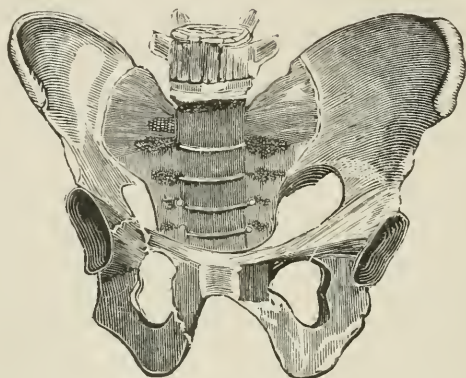
delivery could and should be accomplished. Dr. MacGregor took the forceps and very easily brought into the world a large, at least ten-pound child. With great difficulty, and after long and continued efforts at establishing respiration, we succeeded in part in resuscitating the child. But after a few hours it died. The after-birth came away readily, and under the influence of ice and ergot which we freely administered, as the hemorrhage was considerable, the womb at last firmly contracted.

On subsequent careful examination I found the following conditions: The pubic ramus was fractured obliquely, beginning about where the ascending ramus of the ischium meets it, and pursuing an upward and outward course into the obturator foramen. The soft parts were lacerated by the protruding pubic ramus up to the arch of the pubis. The pubic body was fractured about two inches from the symphysis pubis or in the neighborhood of an inch from the edge of the acetabulum. Exactly what course this fracture took could not be made out by most persistent and varied manipulation. But the symptoms immediately following and continuing to the present time indicate that it, and perhaps other fractures, led into the acetabulum. Tenderness and pain in the region of the sacro-iliac synchondrosis, which followed and which continue to the present time, would indicate that either a separation or a fracture took place in that region. At no time were there any signs or symptoms to show that the pubic symphysis was even put upon the strain. From first to last all pain and trouble in movement were referred to the region of the hip. Of course, the worst possible prognosis was held out to and pressed upon the notice of the friends. But under the use of stimulants, anodynes, sustaining nourishment, frequent douchings of the vagina with carbolized water, in short, the best of nursing care in general, the patient rallied beyond all expectations. She confessed to little or no pain except when moved, and then she described it as excruciating, and always referred it to the locality of the acetabulum. She had no metritis, no peritonitis. On the fifth and sixth day she had chills, fever, headache, sweats, and diarrhea, evincing thereby septicemic poisoning. The first four days she was unable to pass urine without the aid of the catheter. The fracture was treated by a girdle of strong linen webbing, well padded and buckled around the hips. Several small pieces of the fractured ramus have come away, and at last examination, now some seven months from the time of the accident, the laceration was so closed that I could barely touch the bone. The fracture of the body of the pubis was not attended with laceration and is now firmly united; no appreciable callus is discoverable. The patient at present walks on crutches, is unable as yet to take more than one or two steps without them, always experiencing pain in the hips when resting her weight on the leg, and often having severe neuralgic pains from the hip to the knee. Her general health is excellent, her spirits buoyant and hopeful, and she declares that it is her full intention, when she gets a little better, to take measures for another child, with the express understanding

that it shall be brought into the world by means of "Thomas' operation." Being not an unintelligent woman, I had taken particular pains to make her understand the true nature of her case, the troubles and difficulties which might arise therefrom, and the measures that might have to be resorted to in order to meet them. Being a strict Catholic, she had a strong prejudice against pitting her life against that of her infant, and she was inclined to decide that, if one must be sacrificed, that one must be herself; and I had no small trouble in clearing my skirts of blame for resorting to a course that resulted in the child's death, instead of adopting one that almost certainly promised the child's safety and bid fair chances for that of the mother.

As regards the causes of the accident, there is no doubt that there were two at least, one a predisposing and the other an exciting cause; the one dependent upon diseased and deformed bones from morbus coxarius, the other upon the tractions or manipulations of the forceps. As to just the extent or the exact nature of the disease and impairment of the bones, it is impossible to determine. But from all the evidences in the case I am forced to the conviction that the ilium, ischium, and pubis were all involved in the pathological conditions, the central point of which was the acetabulum. It was a case which I think can be entirely referable to simple traumatism, occurring in a young but healthy subject, which, by means of subsequent diseased action on the as yet undeveloped, but growing bones, caused defective nutrition, lack of natural evolution, modification of normal conformation, and impairment of structural firmness. The proximal cause of the accident was, as above stated, the action of the forceps. Were they properly or improperly used? From actual observation and from a knowledge of my colleague's well-known skill, I am constrained to say that in no respect were the forceps improperly handled, either as regards the force employed, the axial direction followed, or the amount of leverage exhibited. My view of the immediate cause and nature of the occurrence is simply this. As the head descended under the tractions of the forceps with its resisting contour, covered by one of the blades impinging directly against the acetabular region of the straightened side of the brim, the pelvis parted *there* under the force imposed, and immediately afterwards, as the whole strain now fell upon the slender ramus, *that* of necessity gave way and severance of the pelvic continuity was accomplished. The

cut below, made under my directions, represents the pelvic conformation and the locality of the fractures as I conceived them to be.



In a surgical as well as obstetrical point of view, it is an interesting question to decide as to the essential elements entering into our patient's recovery. Throwing aside the treatment and good nursing care which she received as simple adjuvants to this end, I think that it depended mainly upon the fact that none of the pelvic viscera received serious injury.

ANALYSIS OF ONE THOUSAND CASES OF MIDWIFERY IN THE PRIVATE PRACTICE

OF

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THE hope that some deductions of interest and value may be drawn from the following statistics and the explanatory remarks appended, has induced me to prepare them for publication.

DELIVERIES.

Full term....	907..1 in	1.1 ..or	90.7 per cent of all deliveries.
Premature....	48..1 in	20.83..or	4.8 " "
By abortion..	45..1 in	22.22..or	4.5 " "

Total.....1000

ABORTIONS.

American women.....	18..1 in 2.5 ..or 40.00 per cent of all abortions.		
Irish “	16..1 in 2.81..or 35.55 “ “		
French “	7..1 in 6.42..or 15.55 “ “		
Negro “	2..1 in 22.5 ..or 4.44 “ “		
English “	1..1 in 45.0 ..or 2.22 “ “		
Scotch “	1..1 in 45.0 ..or 2.22 “ “		

Total..... 45

Before end of 2d month.....	10..1 in 4.3 ..or 23.25 per cent of all abortions of known period.	
Between 2d and 3d “ ..	14..1 in 3.07..or 32.55 per cent of all abortions of known period.	
“ 3d and 4th “ ..	9..1 in 4.77..or 20.93 per cent of all abortions of known period.	
“ 4th and 5th “ ..	5..1 in 8.6 ..or 11.62 per cent of all abortions of known period.	
“ 5th and 6th “ ..	5..1 in 8.6 ..or 11.62 per cent of all abortions of known period.	

Of unknown period..... 2

Total.....45

PARTURIENT WOMEN.

Irish descent.....	393..1 in 2.54..or 39.3 per cent of all deliveries.	
American “	284..1 in 3.52..or 28.4 “ “	
French “	260..1 in 3.84..or 26.0 “ “	
African “	22..1 in 45.45..or 2.2 “ “	
English “	21..1 in 47.61..or 2.1 “ “	
German “	12..1 in 83.33..or 1.2 “ “	
Scotch “	6..1 in 166.66..or 0.6 “ “	
Italian “	1..1 in 1000.00..or 0.1 “ “	
Jewish “	1..1 in 1000.00..or 0.1 “ “	

Total..... 1000

Whole number of primiparous cases.. 236..1 in 4.23..or 23.6 per cent of all deliveries.

“ “ pluriparous cases... 764..1 in 1.3 ..or 76.4 per cent of all deliveries.

Total..... 1000

Legitimate births..... 986..1 in 1.01..or 98.6 per cent of all deliveries.

Illegitimate “ 14..1 in 71.42..or 1.4 “ “ | |

Total..... 1000

DELIVERIES.

Between 6 P.M. and 6 A.M.. 523..1 in 1.87..or 53.36% of all deliveries.

“ 6 A.M. and 6 P.M.. 457..1 in 2.14..or 46.63% “

Not recorded..... 20

Total..... 1000

AGE of youngest mother...16, of French descent and married.

“ oldest mother....46, of Irish “ “

Delivery at 17th pregnancy....1

PRESENTATIONS.

Vertex at full term... 878..1 in 1.02..or 97.44% of all vertex presentations, and 96.37% of all at full term.

“ premature ... 23..1 in 39.17..or 2.55% of all vertex presentations.

Total..... 901..1 in 1.05..or 94.54% of all known presentations of child.

Breech at full term... 24..1 in 1.5 ..or 66.66% of all breech presentations. Breech, 15; Footling, 9.

“ premature.... 12..1 in 3.00..or 33.33% of all breech presentations. Breech, 8; Footling, 4.

Total..... 36..1 in 26.47..or 3.77% of all known presentations of child.

Shoulder at full term. 3..1 in 2.33. or 42.85% of all shoulder presentations

“ premature.. 4..1 in 1.75..or 57.14% “ “

Total..... 7..1 in 136.42..or 0.73% of all deliveries except abortions.

Placenta previa at full term..4..1 in 2.00..or 50.00% of all placenta previa presentations.

“ “ premature...4..1 in 2.00..or 50.00% of all placenta previa presentations.

Total..... 8..1 in 119.37..or 0.83% of all deliveries except abortions.

Funis (full term)..... 2..1 in 477.5 ..or 0.2% of all deliveries except abortions.

Face { forehead, 6 } 8..1 in 119.37..or 0.83% of all deliveries except abortions. Full term, 6; { full face, 2 }

Complex (vertex, foot and funis).. 1..1 in 955.00..or 0.1% of all deliveries except abortions.

Unknown.....13

Hand by side of head in vertex 6..1 in 151.16..or 0.66% of all vertex presentations.

POSITIONS OF VERTEX PRESENTATIONS.

First position....599..1 in 1.5 ..or 74.78% of all known positions.

Second “165..1 in 4.85..or 20.61% “ “

Third “ 18..1 in 44.5 ..or 2.24% “ “

Fourth “ 19..1 in 42.15..or 2.37% “ “

Total.....801

Unknown.....106

DURATION OF LABOR.

One hour.. .. .	8..1 in	119.37..or 0.83 per cent of all deliveries except abortions.
Between 1 and 2 days...	95..1 in	10.05..or 9.94 per cent of all deliveries except abortions.
“ 2 and 3 “ ..	14..1 in	68.21..or 1.46 per cent of all deliveries except abortions.
Three days.....	2..1 in	477.5 ..or 0.2 per cent of all deliveries except abortions.
Four “ .. .	3..1 in	318.33..or 0.31 per cent of all deliveries except abortions.
One week.....	1..1 in	955. ..or 0.1 per cent of all deliveries except abortions.

TWIN CASES.

American women..	7..1 in	1.71..or 58.33 per cent of all twin cases.
Irish “ ..	3..1 in	4.0 ..or 25.0 “ “
French “ ..	2..1 in	6.0 ..or 16.66 “ “
Total.....	12..1 in	79.58..or 1.25 per cent of all deliveries except abortions.
At full term.....	10..1 in	1.2 ..or 83.33 per cent of all twin cases.
Premature.....	2..1 in	6.0 ..or 16.66 “ “
Vertex and breech presentation..	6..1 in	2.0..or 50.00% of all twin cases.
Both vertex “ ..	4..1 in	3.0..or 33.33% “ “
Vertex and shoulder “ ..	1..1 in	12.0..or 8.33% “ “
Both breech “ ..	1..1 in	12.0..or 8.33% “ “
One placenta.....	4..1 in	2.25..or 44.44% of all known.
Two placenta.....	5..1 in	1.8 ..or 55.55% “ “
Both male children.....	4..1 in	3.0 ..or 33.33% of all twin cases.
“ female “ ..	4..1 in	3.0 ..or 33.33% “ “
Male and female children..	4..1 in	3.0 ..or 33.33% “ “

RETAINED PLACENTA.

Delivered by introducing hand into uterus († adherent).	10..1 in	95.5 . or 1.04% of all deliveries except abortions.
Hour-glass contraction of uterus.....	3..1 in	318.33..or 0.31% of all deliveries except abortions.
Post-partum hemorrhage.....	18..1 in	53.05..or 1.88% of all deliveries except abortions.
Ante-partum accidental hemorrhage..	2..1 in	477.5 ..or 0.2% of all deliveries except abortions. 1 from a fall; 1 with breech presentation

RUPTURE OF PERINEUM.

Partial	{ All primiparae. 11 with forceps. }	12
Complete	{ 2 without forceps. }	1
		—
Total	13..1 in 73.46..or 1.36% of all deliveries except abortions.	

MOLAR PREGNANCY.....2..1 in 500.0..or 0.2 per cent of all deliveries. 1
hydatidiform, delivery at 7th month; 1 blood-
clot filling ovum, delivery at 3d month.

OVARIAN TUMOR, with delivery at full term, 2..1 in 477.5..or 0.2 per cent of
occurring in one patient, who had all deliveries except abor-
three abortions previously. tions.

PUERPERAL ECLAMPSIA.

Before delivery..... 4..1 in 3.0 ..or 33.33% of all cases of eclampsia.

After “ 5..1 in 2.4 ..or 41.66% “ “

Before and after delivery.. 3..1 in 4.0 . or 25.00% “ “

—
Total..... 12..1 in 79.58..or 1.25% of all deliveries except
abortions.

With legitimate births.... 9..1 in 1.33..or 75.00% of all cases of eclampsia.

With illegitimate “ 3..1 in 4.00..or 25.00% “ “

—
Total..... 12

HYSTERICIAL CONVULSIONS..2..1 in 500.00..or 0.2% of all deliveries.

PUERPERAL FEVER.....4..1 in 250.00..or 0.4% “ “

PARALYSIS AFTER DELIVERY..4..1 in 250.00..or 0.4% “ “ 2 of face;
1 of right side of body; 1 of optic nerves.

PHLEGMASIA DOLENS.....3..1 in 333.33..or 0.3% of all deliveries.

FIBROUS TUMOR OF VAGINA..1..1 in 1000.00..or 0.1% “ “

CICATRICES OF VAGINA..1 from previous rupture of perineum.—Obstruction to
labor relieved by dividing with bistoury in three
places.

DISLOCATION OF COCCYX..1 primiparous case, and forceps used.

THROMBUS OF VAGINA..2—1 before and 1 after delivery; spontaneous rupture
of the first, and incision of the other.

UNCONSCIOUS PARTURITION

without anesthetics.....1, caused by fright, and followed by hemiplegia.

SPONTANEOUS EVOLUTION of 1 premature; weight of child 6 lbs; diseased and
shoulder to breech pre- still-born.
sentation.

INDUCTION OF PREMA- 2 for contracted pelvis, in same patient; once at eighth
TURE LABOR. month, breech presentation, child still-born; once
at seventh month, shoulder presentation; version
performed and child lived. Craniotomy had been
performed twice previously.

DELIVERIES ASSISTED BY forceps . . .	64..1	in	14.92..	or	6.7	per cent of all deliveries except abortions.
“ “ vectis	12..1	in	79.58..	or	1.25	per cent of all deliveries except abortions.
“ “ version	10..1	in	95.5 ..	or	1.04	per cent of all deliveries except abortions.
“ “ fillet	4..1	in	238.75..	or	0.41	per cent of all deliveries except abortions.
“ “ craniotomy.	3..1	in	318.33..	or	0.31	per cent of all deliveries except abortions.

Total 93..1 in 10.26.. or 9.73 per cent of all deliveries except abortions.

ANESTHETICS ADMINISTERED 101..1 in 9.9 .. or 10.1 per cent of all deliveries.

DEATHS OF WOMEN.

From difficult and protracted labor . .	3..1	face presentation, chin posterior, delivery with forceps; 1 delivered by craniotomy, and 1 twin case, illegitimate, hour-glass contraction and post-partum hemorrhage.
From puerperal eclampsia	7..2	were illegitimate cases.
“ fever	3..1	primiparous, 40 years of age; craniotomy; adherent placenta.
From placenta previa centralis	1..	death 14 hours after delivery; shoulder presentation of child; version.
From hydrothorax	1..	death 8th day after delivery.

Total 15

NOTE.—4 of the deaths were consultation cases; 3 eclampsia and 1 placenta previa.

FUNIS around neck, once . . .	144
“ “ twice . . .	22
“ “ thrice . . .	2

Total 168..1 in 5.68.. or 17.59 per cent of all deliveries except abortions.

KNOT IN FUNIS 2..1 caused death of the child, and labor at 6th month.

Number of male children . . 510.. except abortions.

“ female “ . . 447.. “

AVERAGE WEIGHT.

Of male children at full term No. 468 = 7.43 lbs.

Of female “ “ 408 = 7.40 “

Of total number at full term 876 = 7.42 lbs.

Number weighing 10 lbs 52

“ “ 11 “ 21

“ “ 12 “ 5

One of greatest weight 16 lbs.. hydrocephalic; still-born; breech presentation.

NUMBER OF CHILDREN STILL-BORN. or 79.1 in 12.08. or 8.27 per cent of
who died within twenty-four hours. all births except abortions.

CAUSES OF DEATH OF CHILDREN.

Premature birth.	{ 11 with breech presentation. }	..32.1	in 2.46. or 40.5%
	{ 4 with eclampsia of mother. }		of all births except abortions.
Placenta previa presentation (3 premature).....	7		
Shoulder presentation.....	1		
Breech " (at full term).....	4		
Face " (1 deformed).....	3		
Funis "	3		
Craniotomy.....	3		
Syphilitic disease of child.....	3		
Hydrocephalic " (2 premature).....	3		
Spina bifida "	1		
Knot in funis (premature).....	1		
Funis three times around neck..	1		
Mismanagement of midwife.....	1		
Lingering labor, forceps, and faulty position.....	4	(1 with eclampsia of mother).	
Unknown.....	12	(1 with eclampsia of mother).	

CONGENITAL DEFORMITIES OF CHILDREN.

Spina bifida....	3.1	still-born; 1 died in twelve days; 1 died in five weeks.
Hydrocephalus.....	3.2	still-born, premature; 1 still-born, full term.
Extra little finger on each hand..	1.	removed one week after birth.
Encysted tumor behind one ear..	1	
Imperfect limbs.....	1.	stumps of arms and legs with perfect toes and fingers; still-born.
Talipes varus, both feet.....	1	
Imperforate rectum.....	1.	septum one inch within sphincter; perforated with blunt probe, with relief.
Cataract in both eyes.....	1	
Total ..	12.1	in 79.58. or 1.25% of all deliveries except abortions.

CHILDREN INJURED DURING PARTURITION.

Thrombus of scalp....6.1 caused by forceps, recovered; 1 by parturition, died third day; others recovered.

One child had convulsions, commencing three days after delivery, and continuing nine days; apparently caused by retention of a small mass of meconium, for the child at once recovered after its discharge, by the operation of a cathartic.

Another child also had convulsions, commencing at same period and continuing eight days; cause unknown; child recovered.

Particulars and Recapitulation of Placenta Previa Cases.

No. 1.—Mrs. J——; American; second pregnancy; placenta previa central; duration of labor, four days; shoulder presentation of child; ante-partum hemorrhage profuse, partially controlled by tampon. First hemorrhage began several weeks previous to labor, which was arrested by rest and opium. Delivery by version; male child still-born; weight, eight pounds; mother died fourteen hours after delivery; consultation case.

No. 2.—Mrs. P——; French; third pregnancy; placenta previa marginal; duration of labor, twenty-six hours; vertex presentation, first position. First hemorrhage March 7th, arrested by rest in horizontal posture. March 9th, hemorrhage recurred, with slight pains, and os uteri slightly dilated. Tamponed the vagina, March 10th; removed the tampon, no hemorrhage, March 11th; tamponed again for hemorrhage, March 12th. 3 o'clock A.M., pains with oozing of blood by side of tampon; removed it, and found the os dilated to the size of a silver dollar. With every pain there was hemorrhage. I gave her ergot, and ruptured the membranes. Soon the pains became more efficient, forced the head down upon the placenta, and arrested the hemorrhage. The child was born at 10½ o'clock A.M., without manual interference. Male child still-born; weight, eight pounds; mother greatly exhausted; pulse scarcely perceptible at the wrist; administered alcoholic stimulants and cinnamon freely. Patient had a slow recovery.

No. 3.—Mrs. M——; colored; eighth pregnancy; placenta previa marginal; duration of labor eighteen hours; vertex presentation, first position; I gave ergot, and the hemorrhage was soon controlled, and child born alive, without assistance. Female child; weight, five and one-half pounds. There was slight hemorrhage a short time previous to labor, which was controlled by rest. Mother and child did well.

No. 4.—Mrs. L——; Irish; pluriparous case; placenta previa marginal; duration of labor, sixteen hours; vertex presentation, first position; profuse ante-partum hemorrhage. I administered chloroform, and delivered by version. Male child still-born; weight seven pounds. Mother died six weeks after, of diarrhea and dysentery.

No. 5.—Mrs. K——; French; third pregnancy; placenta previa central; duration of labor, six hours; shoulder presentation; profuse ante-partum hemorrhage. I administered chloroform, and delivered by version. Female child, premature, seventh month, lived half an hour; weight six pounds. Mother had a good recovery.

No. 6.—Mrs. J——; American; second pregnancy; placenta previa marginal; duration of labor, three hours; vertex presentation, first position; profuse ante-partum hemorrhage. Repeated doses of ergot having failed to control the hemorrhage, I delivered by version. Male child, premature, eighth month, still-born; weight seven pounds. First hemorrhage three weeks previous to

labor, controlled by rest and opium. Post-partum hemorrhage moderate; brandy was given freely during the labor. Mother had a good recovery.

No. 7.—Mrs. C——; Irish; sixth pregnancy; placenta previa central; border of placenta detached, and lying in the vagina; duration of labor sixty-seven hours; vertex presentation, first position; profuse ante-partum hemorrhage. I administered chloroform, and delivered by version. Female child still-born; weight nine pounds. Mother had a good recovery.

No. 8.—Mrs. C——; Irish; sixth pregnancy; placenta previa marginal; duration of labor, ten hours; vertex presentation, third position; profuse ante-partum hemorrhage, which was controlled by ergot. I delivered with the forceps, on account of exhaustion of the patient and delay caused by position of the child. Alcoholic stimulants and quinine were given. Male child, premature, eighth month; still-born; weight eight pounds. Mother had a slow recovery.

Recapitulation.—Whole number 8. All pluriparæ. Central 3; two with shoulder and one with vertex presentation. Marginal 5; all vertex presentation. Irish 3; French 2; American 2; colored 1. Tampon in two cases. Delivered by version 5; with forceps 1; without operative interference 2. Deaths of mother 1, fourteen hours after delivery, and 1 six weeks after, of diarrhea and dysentery. Recoveries, 6. Children born at full term 4; premature 4. Still-born 6; alive 2, one of whom was premature, and died in half an hour. Consultation case, 1.

Recapitulation of Puerperal Eclampsia Cases.

Whole number 12, American 5; French 5; Irish 1; English 1. Legitimate 9; illegitimate 3. Stout figure 5; spare 5; medium 2. Edematous 4. Previous ill-health 3. Full term 6; premature 6. First pregnancy 9; pluriparæ 3. Duration of labor less than twenty-four hours 9; over 2. Convulsions before delivery 4; after 5; before and after 3. Deaths of mothers 7; recoveries 5. Male children 4; females 5; unknown 3, Still-born 7, two full terms, and five premature; living 3; unknown 2. Consultation cases 5.

Particulars and Recapitulation of Face Presentation Cases.

No. 1.—Mrs. R——; Irish; first pregnancy; forehead presentation, chin anterior; full term; duration of labor, sixteen hours; female child, weight nine pounds. Natural labor.

No. 2.—Mrs. M——; Irish; ninth pregnancy; full face presentation, chin posterior; full term; duration of labor, thirty-six hours; male child, still-born, weight ten pounds. I called Dr. K. as counsel, and we decided to perform version. I introduced my hand into the uterus, and not finding the feet readily, but the head movable, I changed my plan, and brought down the vertex presenting, as I supposed, and withdrew my hand. After a few pains, the head entered the superior strait, and became fixed, and the presentation was not corrected, but was still face. It was now too late to turn, and after several hours, no progress being made, and the pains becoming feeble, we gave two doses of ergot, which brought on pains of terrific force, and forced the head down low in the cavity, where it became impacted and the labor was again delayed for several hours. We each tried to deliver with the forceps, and failed. Then, the patient beginning to get exhausted, Dr. T. was called in counsel. He tried the forceps, and they slipped off twice. The third time, by great effort, he succeeded in delivering her. She was greatly exhausted, pale, and pulseless. We administered brandy and cinnamon freely, and she rallied slightly, but sank again, and died the next day from no other cause known, except exhaustion.

No. 3.—Mrs. R——; French; sixth pregnancy; full face, chin anterior; full term; duration of labor, six hours; male child, still-born, weight seven pounds. Delivery by version. I had delivered the same patient by version in a previous labor, for shoulder presentation.

No. 4.—Mrs. R——; French; fourth pregnancy; premature six and one-half months; forehead, chin posterior; duration of labor, twenty-two hours; female child, weight four and one-half pounds, delivery with vectis.

No. 5.—Mrs. B——; French; second pregnancy; full term; forehead, chin posterior; duration of labor, thirty-six hours; female child, weight five and one-half pounds. Natural labor.

No. 6.—Mrs. G——; American; first pregnancy; premature seventh month; forehead, chin posterior; duration of labor, twenty hours; male child, weight three and one half pounds; child died in one month and eight days. Delivery with forceps.

No. 7.—Mrs. W——; English; fourteenth pregnancy; full term; forehead, chin posterior; duration of labor, twelve hours; female child, weight seven pounds. Delivery with forceps.

No. 8.—Mrs. L——; French; third pregnancy; full term; forehead, chin posterior; duration of labor, eighteen hours; female child, still-born, weight six pounds; limbs deformed. Delivery with forceps. Consultation case.

Recapitulation.—Whole number 8; French 4, Irish 2, American 1, English 1; first pregnancy 2, pluriparæ 6; full term 6, premature 2; full face 2, forehead 6; chin anterior 2, posterior 6; duration of labor less than twenty-four hours 6, over

2 ; male children 3, female 5 ; still-born 3, one full-term deformed, delivered with forceps, one full-term by version, and one full-term with forceps ; born alive 5, one of whom premature died in one month and eight days ; death of mother 1, natural labor 2 ; delivery with forceps 4 ; with vectis 1 ; by version 1. Consultation case 1.

Periods of Abortion.—The statistics, without explanation, would convey, in part, an erroneous impression with regard to the most frequent period of abortion ; namely, that the greatest number of abortions occur between the second and third months of gestation ; whereas the fact is doubtless that this is the case with the period from conception to the end of the second month, for many more abortions of this period escape the observation of the patient, and still more that of the physician, than of any of the other periods. But, laying this one aside, the comparative frequency of the other divisional periods will probably accord with the conclusion of other observers, that the greatest proportional number occur between the second and third months.

Hour of Birth.—It will be seen that, contrary to the prevalent belief of those outside of the profession, the excess of children born during the night-time over those born during the day-time is small ; the proportion being as 53 to 46 per cent. Indeed, I know of no reason why there should be any difference, except to satisfy the wish of the mothers.

Cranial Presentations.—The record shows, as usual, the great preponderance of cranial over all other presentations of the child at full term, being 96 per cent. On the other hand, of those born prematurely, only a little more than one-half were cranial. We draw the conclusion from this, that many children do not assume the position in the uterus, necessary to give us this favorable presentation, until the last months of gestation, and this fact lends plausibility to the theory that the cervix of the uterus expands gradually during the last months, or those in which premature labor occurs, and not rapidly just before the full period of gestation. Much has been written, and many theories advanced, to account for this almost constant position of the child in the uterus at full term. Of the modern theories, it seems to me that the influence of gravity, except in a minor degree, has been disproved. The

theory, too, that the fetus, by instinctive impulse, or act of volition, executes movements just at the proper time, and in the proper direction, to get into this desirable position, is not tenable in the light of the present knowledge of the functions of the cerebral and spinal systems, and is like the idea of the ancients, that the fetus makes its escape from the uterus by its own efforts at the time of parturition, as the chick does from its shell. The movements of the fetus are doubtless the effect of reflex action, originating in the spinal cord, while soon after birth the movements of the child become instinctive, and later on in its development they come under the control of volition. If we consider the fetus as a double ovoid body, the head constituting one and the smaller ovoid, and the trunk with the limbs flexed the other and larger one; then, if we consider also the cavity of the uterus, when fully developed in gestation, as a double ovoid, with the smaller ovoid downwards, and developed during the last three months, I believe that the argument of Cazeaux, that the form of the cavity of the uterus in the last months of pregnancy and the form of the fetus act *mechanically* upon each other, to induce and maintain this position of the fetus, taken in connection with its reflex movement and possibly in a slight degree with the influence of gravity, pretty satisfactorily solves the problem of the great frequency of cranial presentations.

Breech Presentations.—The proportional number of breech presentations to the whole is larger than that which Leishman states it to be; namely, about 1 in 45 mature births, for here it is about 1 in 38, but agrees with Ramsbotham's estimate. Just one-third were premature deliveries. The deaths of mature children with this presentation were 1 in 6.

Shoulder Presentations.—The number of shoulder presentations, in proportion to the whole, is larger than Leishman gives from statistics of Dr. Churchill; namely, 1 in $231\frac{3}{4}$ cases, while here it is 1 in $136\frac{1}{2}$.

The history of the *first* case of this presentation is interesting as showing the liability to repeated abnormal labors in the same patient. This one had also a shoulder presentation of the child in a previous labor, and subsequently she had a face presentation at one labor, and a still-born hydrocephalic child at another. Version was performed for her in the two

shoulder and the face presentations. The child was still-born at this labor.

In the *second* case, the presentation was complicated with placenta previa centralis. A still-born child was delivered by version, and the mother died fourteen hours after delivery.

The *third* case was that of the last one born of twins, and was delivered alive by version.

The *fourth* case was a premature labor, and delivery of a still-born child was effected by version.

The *fifth* case was complicated with placenta previa centralis. The child was delivered by version, and lived half an hour.

The *sixth* case was a premature labor, and just as I was about to turn, spontaneous version to a breech presentation occurred, and a still-born child was delivered without assistance. The child was small and pelvis roomy.

The *seventh* case occurred in connection with a contracted pelvis, in which premature labor was induced at the seventh month, and the child was delivered alive by version. The history of this woman will be given more fully, under the head of craniotomy cases.

An analysis of these cases corroborates the views of other observers as to the causes of these presentations. The first one, that there is some anatomical peculiarity in the maternal organs in some cases, which is persistent, and causes the same or a similar accident in successive pregnancies. The second and fifth, that the implantation of the placenta in the inferior segment of the uterine cavity operates as a cause, by filling the space that should be occupied by the head of the child, and crowding this into one or other iliac region. The fourth, sixth, and seventh, that premature delivery before the fetus is finally adjusted to the fully developed uterine cavity furnishes these, as well as breech presentations. The delivery in these cases, without mutilation of the child, must always be effected by version, either spontaneous or operative, and cases of spontaneous are so rare that they may be left out of the account. Therefore we must resort to operative version, by some one of the several methods now practised. First, by external manipulation only, if possible; next, by the combined external and internal manipulation, to produce either cephalic or podalic

version; and lastly, if these fail, by the old method of podalic version, by introduction of the whole hand into the uterus. With a knowledge of these several methods at our command, and with the assistance of chloroform, to produce relaxation and lessen the shock, the prognosis for the mother ought to be exceedingly favorable, and not by any means such as Churchill's, when he estimates that out of 235 cases 1 in 9 of the mothers were lost. The single death in the above cases was caused by the hemorrhage of a placenta previa centralis, and the patient was moribund before delivery was attempted. This will be referred to again among the placenta previa cases. The mortality to the children is necessarily large, because of their frequent immaturity, connection with complications, and the conversion into a breech presentation, which always involves additional risk to the child.

Placenta previa.—The proportion of this accident is considerably larger than statistics usually show, and when two of these frightful cases occurred to me within one week, in the course of a moderate practice, I thought I had more than my share. The proportion estimated by Johnson and Sinclair is 1 in 573 cases, while here it is 1 in 119. The causes are obscure, but a clue is furnished by the fact that nearly all the cases occur in pluriparæ. My cases were all such. The uterus is left enlarged, and the cavity somewhat increased in size, and the mucous membrane consequently being expanded, is not so greatly convoluted at the menstrual periods, after the occurrence of the first pregnancy. Thus there is less mechanical obstruction to the descent of the ovum to the lower portion, and to its becoming engrafted there, whether it is impregnated before or after the descent. But this can be only one factor as a cause, else the cases would be more frequent. The prognosis in these cases is grave, and the risk to the mother is certainly great, but in my opinion there is no class of dangerous cases in midwifery, where prompt, energetic, and judicious management yields better results. The mortality of the children is unavoidably large. As to treatment, the only rule of practice that can be laid down for all cases, after labor has commenced, is to deliver the quickest by any method that is safe, and the method that best fulfils these conditions in the large majority of cases is version by the old method. If the

os is not sufficiently dilated to admit of the safe introduction of the hand into the uterus, the vagina and os should be efficiently tamponed until it is, and it may be borne in mind that it is not necessary that it should be fully dilated, and that it can be forcibly dilated by the hand safely, more speedily, and at an earlier period, because they are pluriparous cases, and because of the relaxing effect of the hemorrhage. The objection to the other methods of version is, that while you are effecting it, the hemorrhage is not controlled, and if you fail, you have temporized, and put your patient in greater jeopardy; whereas by this method the presence of the arm in the os effectually controls the hemorrhage while you are making the attempt, even if there is delay in accomplishing the version. Exhaustion of the patient need not necessarily delay the attempt, for the patient can be rapidly stimulated while it is going on. In some cases of vertex presentations of the child accompanying the placenta previa, especially if it is marginal, and the hemorrhage does not threaten immediate danger, resort may be had to puncturing the membranes, and ergot used, hypodermically by preference. In shoulder presentations, neither should be practised, of course, but preparations be made at once for version. The single instance of death among these cases, attributable to the hemorrhage, illustrates well the danger of delaying delivery. This was a consultation case, and when I was called I found that blood was constantly leaking from the vagina by the side of the tampon, and the patient already in a state of collapse, in a semi-conscious state, with a cold, clammy perspiration; a small, thready pulse; pale, colorless countenance; labored breathing; and very feeble labor pains. The only hope for her was in stimulation and immediate delivery. Alcoholic stimulants, with quinine and ammonia, were administered freely, and soon I removed the tampon, and introducing my hand into the vagina, I found a central placenta previa, with the os fully dilated. Without withdrawing the hand, I crowded the placenta to one side, and found a shoulder presentation of the child, which had not been detected before; then pushing the hand into the uterus, I turned by the foot and delivered without difficulty. There was no hemorrhage after this, for the simple reason that she had no blood to lose. The system failed to respond to stimu-

lation, and she died fourteen hours after. If means had been at hand for transfusion, she might possibly have been saved after the delivery. The women in attendance told me that she had strong, propulsive pains the day before, and probably could have been delivered then, if the attempt had been made. All the circumstances were unfavorable for the patient, for she lived four miles away from physicians, and the one employed was an old man, past his efficiency, and worn out by two days and nights of anxiety, watching, and loss of rest.

Funis Presentations.—In the two cases of this accident at full term, one was a natural labor, and the other was a forceps delivery. Both children were still-born. The cord was not replaced in either case. There was one other which was premature, and the fetus dead from other causes than the prolapse of the funis.

Face Presentations.—There were two of these full face, and six forehead; eight altogether, or 1 in 119 of all deliveries, except abortions. The sad result of the *second* case, which was a full face presentation, with the chin posteriorly, and at full term, in connection with a better knowledge of the mechanism of labor, has convinced me that, contrary to the advice of some late authors, all such cases should be treated by version while the head is at the superior strait, and when it can be effected. It is probably safe to trust all chin anterior, and premature chin posterior cases to Nature and the forceps, but it seems to me that the uncertainty of full-term chin posterior positions rotating to the front is so great that we should not take the risk. It will be seen that in the above cases all the chin posterior ones that resulted favorably were either of premature or small children, and even these, with one exception, were delivered with instruments.

Complex Presentations.—There was only one of these and this was of the head, one foot and the funis. This was a consultation case, and when I made my visit all these parts were well down in the cavity of the pelvis, and there was no pulsation in the cord. Chloroform was administered, and I first attempted to perform podalic version by traction with the foot, but failing in this I applied the forceps to the head and delivered without difficulty, the foot receding as the head advanced. The child was still-born.

Positions.—With regard to positions of vertex presentations, the numbering is that generally adopted now; the *first* being that in which the head is in the right oblique diameter (the diameters being named right and left according to the sacro-iliac synchondrosis from which they spring), with the occiput forwards; the *second*, the head in the left oblique with the occiput forwards; the *third*, the head in the right oblique with the occiput backwards; the *fourth*, the head in the left oblique with the occiput backwards. It will be seen that nearly 75 per cent were in the first position. The next greatest number, and over 20 per cent, were in the second; while a very small and nearly equal number were in the third and fourth. It must be taken into account, however, that these are observations in private practice, where they are not usually made as early in the labor as in lying-in hospitals, and rotation from a posterior to an anterior position may have occurred in a portion of the cases before examinations. Besides, there were doubtless errors of diagnosis in the early years of my practice. Yet I cannot resist the conviction that Naegele was in error when he claimed that the third position is more frequent than the second. I believe the reverse to be the fact, and I think this is the conclusion the majority of other observers at the present day are coming to.

The causes of the great frequency of the first position seem to me to be mechanical in connection with the reflex fetal movements, the same as control the presentations, with the exception that gravity has even less, if it has anything at all to do with this correct and final adjustment of the fetus to the cavity of the uterus prior to the act of parturition. To explain fully the whole process by which this adjustment is attained, it is necessary to go back to the early period of pregnancy. It is generally admitted that the presence of the rectum, frequently distended in the left side of the pelvis, crowds the enlarging uterus to the right side of the median line, and this is a wise provision to lessen the pressure upon the rectum that would tend to paralyze its action, and to lessen the liability to retroversion of the uterus occurring at about the end of the third month, which would happen oftener than it does, if the uterus enlarged upwards directly in the median line, meeting as it would with the promontory

of the sacrum, an obstacle that would likely crowd the fundus downwards and backwards into the hollow of the sacrum. Then, as the uterus enlarges still more and rises up out of the true pelvis, its direction to the right is continued and maintained by the projection of the spinal column forward into the abdominal cavity. After this, its enlargement is more readily in a direction upwards, forwards, and to the left, because of the unyielding nature of the structures behind and to the right of it, and this direction is further favored by the distensible anterior walls of the abdomen, and greater unoccupied space to the left of the spinal column, the right being occupied by the partially enlarged uterus and the liver. The fetus begins to assume a curved form in its early embryonic state; the two extremities of the spinal column, which is first developed, the cephalic and caudal, bending forwards towards each other. As the development proceeds and the limbs are formed, these are flexed upon the anterior surface of the body, and by the time that the fetus nearly fills the cavity of the uterus it is strongly flexed, and the spinal column is arched like a bow. Now, by its reflex movements, it adapts itself to the cavity it nearly fills, and the result is simply the fulfilment of the mechanical law, that the form of the body and of the cavity which it fills must correspond. The enlargement of the cavity of the uterus being, as we have seen, forwards and to the left, the most prominent portion of the fetus, that is, the arched back, must follow this direction at the period in which it is about to nearly fill the cavity, and this brings it forwards and to the left, and the occiput in the same direction. Thus, when the second stage of labor begins, the long diameter of the head is ready to engage in the longest diameter of the superior strait of the pelvis. The variations from this are mostly in the case of premature deliveries, and of a dead fetus, for the obvious reasons that in the former the size of the fetus and of the cavity are not so nearly equal, thus allowing movements of the fetus in various directions; and in the latter the position, whatever it may be, is accidental, and doubtless in some instances effected by external causes.

The same law holds good with reference to breech presentations, and the explanation is the same. Here, too, the first position, or that with the back forwards and to the left, is the

most frequent. This brings the longest diameter of the breech into the left oblique diameter, but the longest diameter of the head into the right oblique, which is the most favorable for the most difficult part of the delivery, that of the head.

Twin Cases.—The proportion of these is 1 in $79\frac{1}{2}$. The average stated by Playfair is 1 in 87; by Leishman 1 in 75 to 80. As regards the sex of the children, it will be seen that of the three classes, that is, where both were males, both females, and those of opposite sex, the number was just equal, or for the total an equal number of each sex. In half of the cases the presentations were vertex of one child and breech of the other; both vertex in four of the cases; and one each of both breech, and a vertex of one child and shoulder of the other.

Adherent Placenta.—There are four of these cases recorded. Possibly there might not have been as many as this if I had practised Credé's method of expression of the placenta formerly as frequently as I do now. Very likely also the frequency of hour-glass contractions of the uterus may be reduced by this practice.

Post-partum Hemorrhage.—There are eighteen of these cases. Only those were recorded in which there was a decided impression upon the vital powers. The means resorted to for the prevention and arrest of the hemorrhage were such as are usually employed; firm pressure upon the fundus of the uterus, commenced as soon as the head is born, and continued until firm contraction is secured, after the delivery of the placenta; cold applications suddenly to the abdomen and cold to the vulva; a full dose of ergot just before the birth of the child if hemorrhage is anticipated; ice applied to the os uteri; elevation of the foot of the bed; and firm application of the binder. I have never had occasion to resort to intra-uterine injections of any kind. In two instances alarming hemorrhage was quickly controlled by the introduction of a large naked icicle into the vagina and up to the os. In only one case was death of the mother in any degree attributable to this cause, and several other causes operated with this, and contributed more largely than this to the result. I believe that if obstetricians would invariably, persistently, and methodically resort to the well-known means of prevention, among which I would include Credé's method of delivery of the pla-

centa by expression and letting the cord alone, fatal results would be exceedingly rare.

Rupture of the Perineum.—There were thirteen of these accidents, all in primiparæ. Twelve of these were partial or did not involve the sphincter ani. The remaining one was complete and extended entirely through the sphincter. Whether this is a large or small proportionate number I am unable to say, having no statistics at hand. In eleven of the cases the delivery was with the forceps, but I am not prepared to admit that their use caused this result, nor yet to positively deny it. Partial rupture would have been likely to occur in these cases even if the forceps had not been used. If their use did contribute to the rupture, it is a fair question whether this misfortune is not more than compensated for by the greater chance afforded the child for its life, endangered as it is by the long delay, and compression of the head in the pelvis.

In this connection I may say that the treatment in all these cases of partial rupture was postural, and strict attention to cleanliness; the use of carbolic solutions, and longer confinement to bed than usual. All healed satisfactorily except that in one instance three cicatricial bands were left, crossing the lower extremity of the vagina diagonally, which delayed the progress of the head in the next labor, and had to be cut with a bistoury. In subsequent labors there was no difficulty. So I believe that the practice recently advocated in some quarters, of immediately uniting the rupture in all cases, is not necessary. In hospital practice, where the physicians are more surgeons than obstetricians, and where the patients are more under control, it is more practicable than in private practice. The woman with the complete rupture has often been advised to have an operation, but would not submit.

Puerperal Eclampsia.—There were twelve of these cases, or 1 in $79\frac{1}{2}$, of which five were in consultation. Three, or one-fourth, were in connection with illegitimate births. Only four are recorded as being edematous subjects. Unfortunately a record was not kept of examinations of the urine. A study of these cases leads me to the conclusion that too great prominence is given to albuminuria as a cause of these convulsions. The discovery that there is in many cases an intimate relationship between the two conditions has carried

authors to the extreme. It has been estimated that albumen exists in the urine in more than twenty per cent of pregnant women, and, in the case of primiparæ, in considerably greater proportion than this. In these statistics the ratio of eclampsia cases, including the five seen in consultation, to all labors is only a little over one per cent, leaving a proportion of about 20 to 1 in which convulsions do not occur with albuminuria. Besides, here the proportion of eclampsia cases to all labors is much larger than that usually given. Albuminuria is also often connected with specific diseases, scarlatina and diphtheria for example, without convulsions, and among children, who are peculiarly susceptible to these nervous disorders. Various forms of functional disturbance of the nervous system are often associated with pregnancy. The nervous centres at this period are in a state of exalted sensibility and irritability. The emotional element preponderates, and causes acting upon the emotions intensify this element in some cases to that pitch that control and balance are lost and convulsions ensue. This will explain eclampsia in illegitimate pregnancies in the absence of other causes. The shame, the fear of exposure, the unremitting anxiety, the solitary brooding, strain beyond endurance the nervous centres with their supply of nerve-force already diminished by the demands of pregnancy.

Induction of Premature Labor.—I have had occasion to resort to this operation but twice, and this was for contracted pelvis, and both times in the same patient. No cases of vomiting in pregnancy have occurred in my practice so severe or uncontrollable as to threaten life and require this last resort. No other cases of contracted pelvis in which craniotomy was performed, except this one, were known before labor commenced. The parturient history of this woman is interesting to prove that "meddlesome midwifery" may sometimes accomplish valuable results. She is a healthy, strong, and robust woman, and at the time of her first parturition, which was at the [full period of gestation, she was thirty-three years of age. I was called in consultation with two physicians after she had been in labor over two days. They had tried to deliver her with the forceps but failed. I also tried and failed. We then performed craniotomy, but were obliged to use the fillet under the axilla to

deliver the body. The child weighed about eight pounds. She was then urgently advised to have premature labor induced if she became pregnant again. She did not heed the advice, but went on to full term next time, and employed another physician who delivered her by craniotomy after failing with the forceps as before. She became pregnant the third time, and consulted still another and the fifth physician. He persuaded her to have labor induced at about the seventh month, and began the operation; but before it was concluded, I was called in consultation. We found a breech presentation of the child. It was delivered without mutilation, but still-born. In her fourth pregnancy she consulted me, and at about the seventh month, I dilated the os uteri with tents, and finding a shoulder presentation, put her under the influence of chloroform, performed podalic version, and delivered her of a living child. Its weight was about five pounds. She became pregnant the fifth time and consulted the physician who performed craniotomy at her second labor. He also induced premature labor at about the same period as it had been done before, found a vertex presentation, and delivered a living child. To recapitulate, she has been delivered of five children in as many pregnancies; the two first times by craniotomy, after failure with the forceps; the three last times by the induction of premature labor at about the seventh month. The first of these three last children presented with the breech and was still-born; the next with the shoulder, and was delivered living by version; and the third with the vertex, and was delivered living. She and her two children are now living and in good health. She has given five different physicians the opportunity to operate either by craniotomy, version, induction of premature labor, the forceps, or the fillet, in fact, to practise nearly all of operative midwifery.

Forceps.—These were used in sixty-four cases, or in the proportion of about 1 to 15 labors, excluding abortions. In the first five hundred cases the ratio in round numbers was 1 to 30; in the last five hundred 1 to 10; and in the last one hundred 1 to 5. It will be concluded that I am in favor of the frequent use of the forceps, and I believe that the character of the cases as they average in practice will warrant this, both in the interests of the mother and child. The doc-

trine still taught in some standard works on midwifery, that the blades of the forceps should be applied to the sides of the child's head, and that therefore it is necessary that the actual position of the head be made out with perfect certainty, and that we must first be sure with which of the cranial positions we have to deal before we even take the instrument into our hands, is erroneous and mischievous, and ought to be expunged from our text-books. This bugbear has deterred many young practitioners from the use of this valuable resource of saving life and alleviating pain. The suffering mother has a right to demand of us the use of the forceps, as she often does, where she has previously experienced their harmless aid. We mock her when we urge her to exert herself to the utmost to complete the labor, and sit calmly by and make no effort ourselves.

Weight of Children.—The statistics do not show as great a difference in the average weight of males and females as is usually supposed, it being only .03 of a pound in favor of the males.

In conclusion, I may say that I apply the binder in all cases after delivery, and believe there are sound reasons for the practice. It should be evenly and firmly applied, and well down over the hips. There is as good reason for its application as after the operation of paracentesis abdominis. It gives support, and acts as a splint for the walls of the abdomen, and for the pelvic joints relaxed by gestation and strained by parturition. It acts as a preventive of secondary post-partum hemorrhage, occurring sometimes several hours after delivery. It restores the form, and, lastly, it is agreeable to the patient.

I apply but one ligature to the cord in single births. This is all that is necessary, and gives us a saving of time. The bleeding through the cord lessens the bulk of the placenta, and thus promotes contraction of the uterus and easier expulsion.

BURLINGTON, VT., February, 1879.

CLINICAL CASES.

A CASE OF ENORMOUS POLYCYSTIC OVARIAN TUMOR.

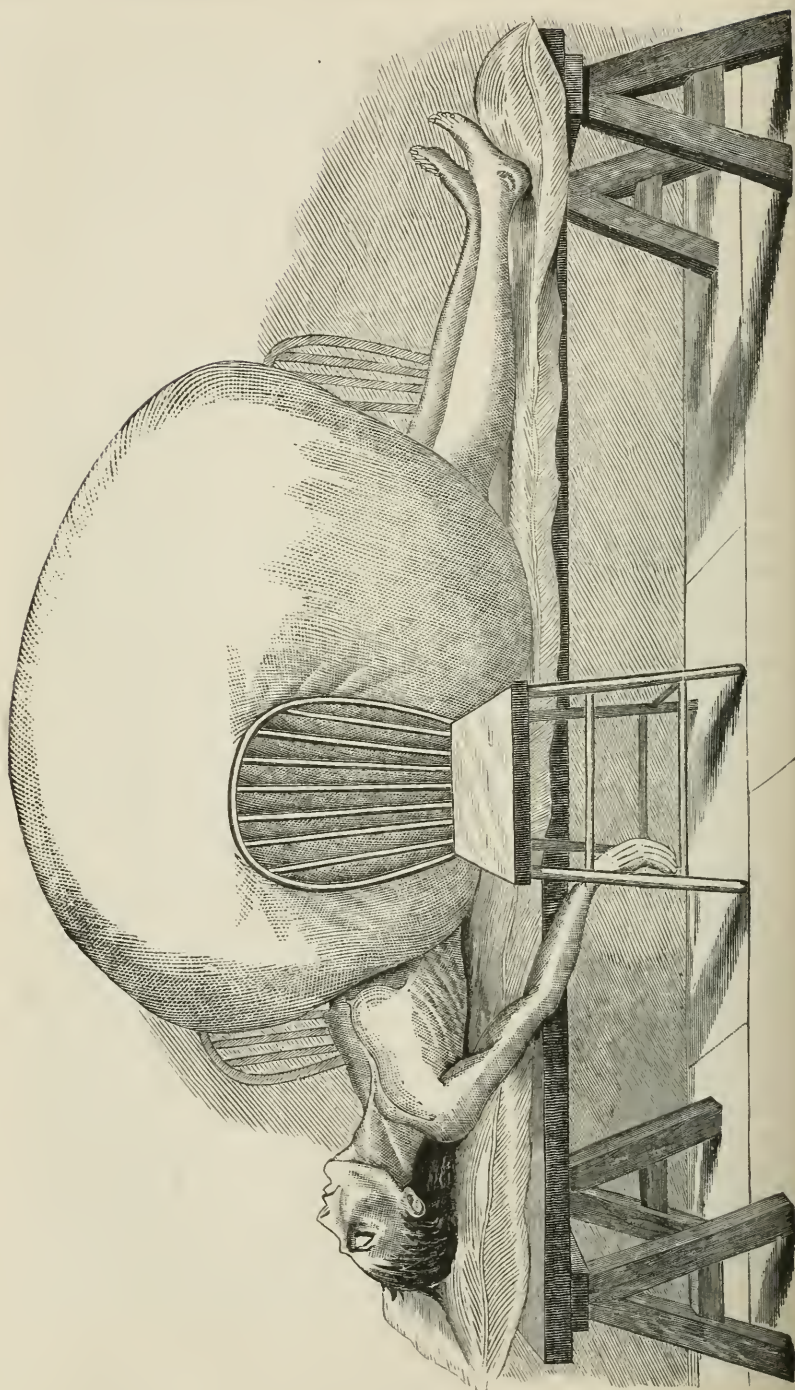
REPORTED BY

LOUIS A. RODENSTEIN, M.D.,

New York.

(With Woodcut.)

MRS. BENNETT, aged 45, died about the beginning of April, 1878, in consequence of the encroachment made upon the heart and lungs by a double encysted ovarian tumor. The patient had been suffering from ovarian disease during eighteen years prior to her death, during which period the tumor had gradually increased till its proportions had become enormous. At an early stage of the disease, ovariectomy had been suggested to her by me, but she shrank from the operation in the hope that time would mitigate her suffering. The tumor, however, continued to grow until its size became the occasion of great anguish and constant discomfort. Driven by the acuteness of the pains she endured, she again applied to me and I repeatedly tapped her. In 1870, she went to Dublin, Ireland, and sought the advice of Sir Dominick Corrigan who, fearing that she could not endure the shock of an operation, dissuaded her therefrom and sent her back to this country. From the year 1873 to the period of her death, the tumor grew rapidly till it depended below her knees and pushed the thoracic viscera upwards and conspicuously out of place. The integuments were stretched to the utmost, and the skin, white and glistening, seemed ever on the point of bursting. During the last six months, dyspnea of a severe character troubled her, and existence became an intolerable burden. Death came to her relief in April, at which time so great had become the ovarian mass that her friends requested its removal with a view of adapting the remains to a decent-sized coffin. Dr. O'Leary was summoned for the purpose, and with the aid of a neighboring physician proceeded to the task. The cadaver presented a most impressive appearance. The shrunken and emaciated frame seemed to dwindle to still smaller dimensions in the shadow of the colossal mass which rested upon it. By dint of strong efforts the body was placed in a supine position, and the immense tumor steadied by means of chairs and trunks placed on each side (as shown in the



cut, in which the normal proportions have been carefully reproduced). It then seemed to stand three feet above the body, whilst its bulging sides rested on the bed. Superiorly it concealed the mammae from view, and inferiorly rested on the knees. An incision was first made near the superior spinous process of the ilium, for the purpose of drawing off the ascitic fluid which surrounded the tumor proper, and in this way about two gallons of a sero-sanious liquid were gotten rid of. Then an incision from the ensiform cartilage to the pubes brought to view the solid, dense and coherent mass which seemed to struggle upwards through the peritoneum and the tense muscles of the abdomen. The peritoneum adhered to the tumor at a great number of points, as did also the omentum and the large and small intestine. From these attachments it was gradually freed, and its homogeneous character revealed as far as the root by which it adhered to and was lost in the sacro-iliac muscles. The uterus and its appendages were atrophied to mere nothingness, as indeed was the case with all the other organs of the abdominal cavity, nor could this be otherwise, for the tumor had filled every available space, and by reason of long continued crowding, had reduced the uterus, bladder, and kidneys to a shadow of themselves. When the pedunculated attachment had been reached, the tumor was cut away and rolled with a dull sound into a large washing tub, which had been provided for the purpose of holding it. An effort was now made to sew up the incision, but the unsightly appearance of the overdistended integuments, which lay upon the body like a pile of half cured leather, suggested that one side should be made to overlap the other, and thus the body was brought to a semblance of humanity, by means of a few rude stitches which bound the middle of the rectus muscle to the back. As before stated, about two gallons of a sero-sanious fluid had been drawn off at the outset, which quantity, together with the fluid which escaped during the process of removal, would make the entire amount of ichorous matter which accompanied the tumor about four gallons. The tub into which the tumor fell weighed $11\frac{1}{2}$ lbs., and both tub and tumor weighed $157\frac{1}{2}$ lbs., thus allowing the whole mass the enormous weight of 146 lbs. The tumor belonged to the order of multilocular, each separate cyst was about the size of an orange, and was bound to the others by a semi-organized gelatiniform substance. As each cyst seemed to contain minor cysts, the tumor evidently belonged to the proliferous class. The cyst-walls possessed considerable thickness, by reason of the deposit of coagulated blood and inflammatory products.

Unfortunately, the family would not consent to the preservation of the tumor, but insisted upon its being buried with the remains.

The writer is indebted to Dr. O'Leary for the above description of the tumor.

A CASE IN WHICH CONCEPTION FOLLOWED VERY IMPERFECT CONNECTION.¹

BY

SAM'L B. WARD, A.M., M.D.,

One of the Professors of Surgery in the Albany Medical College.

ON December 8th, 18—, Mr. X. consulted me, giving the following history: The young lady to whom he is engaged to be married commenced to menstruate on November 8th, and the flow ceased on November 10th, in consequence of exposure to cold, her usual period of menstruation being five to six days. "On the evening of November 20th," he further stated, "my intended was lying at the back of a sofa, on account of some temporary indisposition, and I was half reclining at her side, my feet on the floor, my head on the pillow beside hers, and my buttocks on the edge of the sofa. After some conversation in the positions I have described, she fell asleep, and I, being exceedingly tired by a long and hard day's work, very soon did the same. Her parents, being fatigued, had previously retired to bed. It was about 10 P.M. when we fell asleep, and I soon had a lascivious dream. The next thing of which I am conscious is that I was awakened, as had frequently occurred before, by being on the point of having a seminal emission, and to my utter horror found my intended's clothes drawn up, her drawers unbuttoned, my pants open, and my penis between her thighs. I am certain that I did not have full connection with her, but it is possible that the head of my penis may have passed between the labia; but at the time of the emission I am absolutely certain that the head of my penis was so entirely outside of her external genitals that the discharge covered her thighs and labia, and, when wiped off with a handkerchief, thoroughly saturated it, besides soiling her drawers. I was so horrified at what had occurred that I was sweating at every pore, until my underclothing was saturated. Nothing of any importance has occurred since; I have, of course, had no connection with her. On December 6th, she

¹ Read before the Albany Co. Med. Soc., November 6th, 1878.

ought to have had her courses, and has not. What are the chances of her being pregnant?" I knew the man well; was and am perfectly confident that he told me the entire truth, so far as he knew it, and that he himself was one of the few in our day who had never before had connection with a woman. How should I answer him? I replied that, in my opinion, it was perfectly *possible* that she *might* be pregnant; but that, if he had told me the exact and whole truth, the chances were a hundred to one against pregnancy. And so I firmly believed.

On January 3d of the next year, the lady ought to have menstruated again, and did not. During the previous month she had been quite ill with an attack of intermittent fever and inflammation of the bladder. On January 13th, I saw the lady for the first time in several years, and found a rather stout, well-formed woman of 22, American by birth, refined and well educated, brought up in the easiest of circumstances, and appearing in general good health, but somewhat anemic. She enjoyed excellent health all through her childhood, and up to eleven years, when she had a severe attack of diphtheria. At fifteen years of age she had a second attack, followed by paralysis, which lasted ten days, and kept her in poor health for about a year. She has since had a third attack, not so severe as the previous ones. These illnesses had told on her nervous system especially, and produced attacks of hysteria and extreme nervous exhaustion at irregular intervals. Her family history on both sides was good. There was nothing worthy of note concerning her menstruation until two years ago, when it began to give her some annoyance in the way of pain in the back and irregular appearance, returning sometimes after a lapse of thirty days, and sometimes of only twenty. About this time she also began to have—soon after the flow ceased at each period—three or four severe pains, which she describes as making her feel very faint, lasting three to five minutes, and expulsive in their character. Still there was never anything so serious about her menstruation as to lead her to seek professional advice.

She was, naturally enough, very anxious about the possibility of being pregnant, and desired an examination. Her breasts were not at all changed, the areola was not darkened, and there was no development of papillæ in them. She had had some nausea during the preceding month, but no more than her father and other members of the family, who, like herself, had had intermittent fever, all at the same time. No other signs of pregnancy existed. The examination of the uterus showed that it was, perhaps, slightly enlarged, anteflexed, and a little tender; the cervix conical and

firm. Taking all the circumstances into consideration, I still did not believe that she was pregnant. Residing, as she did, in a neighboring city, her family physician had, at the time when her previous menstruation was due, given her emmenagogues, believing that the November menstruation was stopped by the exposure to cold, and the failure of the process to appear in December was due partly to this previous check, and partly to her illness during the intervening period. I was of the same opinion, and advised that these remedies be continued at the time when the menses were next due.

On February 4th, I was summoned to her home to see her again. I found that she had made use of the emmenagogues as advised, that her menses, which were due on January 31st, had not appeared, and that the use of all medicines had been discontinued for two or three days before my arrival. Vaginal examination showed that the uterus was considerably more enlarged than when she was last seen; there appeared to be, perhaps, some change in the breasts, but if any, it was very slight, and uterine contractions, not very frequent or very hard, had come on. The uterine mass now seemed too hard for a pregnancy, and suggested strongly the possibility of a uterine polypus in process of being expelled. As there was still a possibility that she was pregnant, anodynes were freely given, with a view to preventing miscarriage, should such be the case.

February 5th.—Pains, more frequent and so severe as to preclude sleep, occurred all last night and at short intervals to-day. It was in the afternoon evident that the patient was becoming worn out by the continued pains, and, if pregnant, was certainly about to miscarry, pains having now lasted three full days; I therefore introduced a rubber catheter, and left it in the uterus about two hours—as long as she said she could bear it—with the effect of so decidedly increasing the pains that there seemed no doubt that the uterus would empty itself of its contents, whatever they might be, before morning.

February 6th.—Pains continued all last night with only a very trifling flow, permitting some sleep, and disappeared this morning. Uterus firm and contracted on its contents; no considerable softening down of cervix. Absolute rest was enjoined, and opiates again freely administered, in hopes that the return of uterine action might be averted, it having ceased this morning. If the patient was pregnant, this was the only thing to strive after, and if she was the subject of a uterine polypus, it would do no harm. In the afternoon the pains reappeared, although the patient was fully under the influence of opium and the pupils contracted to a pin-point. The anodyne was ordered continued during the night.

February 7th.—Did not sleep half an hour all last night on account of very frequent and very severe pains. Had some rest during the day to-day, but is much worn out. Toward evening pains returned with considerable severity. Anodynes continued.

The mother to-day called my attention especially to the fact that the pains which her daughter is now suffering are precisely similar to those of which she has had three or four after each menstrual epoch during the past two or three years.

February 8th.—Patient still fully under the influence of opium, but the pains last night totally prevented sleep; some decided flow this morning for the first time. The neck of the uterus has shortened and softened, and the os is dilated to the size of a lead-pencil. The effort to avert uterine contraction had signally and manifestly failed; the patient was much exhausted by three days' loss of sleep and almost of food. In the evening a catheter was again introduced into the uterus with instructions to leave it all night.

February 9th.—Patient could only retain the catheter until 3 A.M.; had hard pains all night and no sleep; some decided flow now existed for the first time, but not at all serious. After three days of pain, which the patient considered severe, and three days more of what I *knew* to be hard pains, the uterus still retained its contents; very little dilatation of the os had occurred; the neck was very slightly shortened, if at all, and the uterine mass, which could be at all times readily defined by bi-manual palpation, was almost as hard as stone; while, on the other hand, not a single one of the usual signs of pregnancy had ever been well marked, except the cessation of the menses and the uterine enlargement. All these facts forced one to the conclusion that we had to deal with a uterine polypus. Warm vaginal douches were ordered, and the patient was pretty comfortable during the day, but very much exhausted with the pain she had suffered and the loss of her appetite and rest. Temperature, $100\frac{1}{2}^{\circ}$; pulse, 90; anodynes continued; pepsine and bismuth, and tonics and stimulants have been used as required.

February 10th.—Very little sleep again last night, on account of uterine pains. At 6 A.M. had a hard chill, lasting an hour and a quarter. When I first saw her at 9 A.M., her temperature was 103.5° and pulse 100, and patient very much worn out. I now asked for a consultation, and the family consenting, their physician was called in. He was a man well known by reputation all over the country, and informed me that he had had occasion to see within the past six or eight years, either as attending or consulting physician, over two hundred cases of miscarriage. I was really glad to have such good counsel. The doctor's first impression was

in favor of pregnancy; but when he had heard the full history of the case, and felt for himself the firmness of the uterine mass, he confessed himself in grave doubt, and thought the best thing to do was to introduce a laminaria tent, with the view of exploring the uterine cavity with the finger and making a positive diagnosis. This was assented to; a good-sized tent was introduced with the aid of a Sims' speculum, and anodynes continued. This was at 11 A.M. At 1 P.M. patient had a slight feeling of chillness and felt feverish all the afternoon. At 7 P.M. the tent was removed, but had not dilated the cervix sufficiently to permit the introduction of the finger. The vagina was somewhat dry and very hot and tender. The patient's temperature had risen to 106° and her pulse to 120. A copious tepid vaginal injection made her more comfortable. She received 10 grains of quinine with her McMunn's Elixir at 8 P.M., and at 10 P.M. her temperature had subsided to 105° . At 11 P.M. she had another severe chill, shaking the whole bedstead, and lasting twenty minutes. Her temperature at this hour had risen to over 106.5° and pulse to 135.

February 11th.—The day was occupied in quieting the existing constitutional disturbance. Another chill occurred at 7 A.M., not severe, but temperature at 8 A.M. was up to 105.5° and pulse to 120. There were so few pains during the day that no anodyne was needed. Five grains of quinine was given twice during the day, and ten grains at bed-time. At 1 P.M., temperature 101.5° and pulse 110. Chill, lasting twenty-five minutes, at 8 P.M., carried the temperature to 103° .

February 12.—Was in a profuse perspiration all night, and slept very quietly six or seven hours. Temperature at 8 A.M., 97.5° , pulse 84. Being now fully persuaded that we could not have a pregnancy to deal with, it was decided at the consultation to introduce a larger tent, so as to be able to explore the uterus, and this was done at 12 M. The tent caused slight uterine pains only, and the highest temperature reached during the day was 99.5° . At 5 P.M., the tent, being fully expanded, was removed, and at my request the consulting physician first examined the uterus. He stated that his finger passed through the cervix, which was over an inch long, and through the internal os, encountering in the uterine cavity a firm, pretty smooth, hard mass, which he was confident was a fibroid, lying for the most part in the uterine cavity. A few minutes later I also made a digital examination, but contraction had already so closed the canal, and the patient complained so bitterly of the suffering which the examination caused, that I was unable to get the end of my finger fully through the internal os.

I could distinctly feel the hard mass already spoken of, which, however, in the strongly anteflexed condition of the organ, seemed to me as if it might be in the anterior wall of the uterus rather than in the cavity. On talking the matter over, we came to the deliberate conclusion that it was a uterine fibroid in process of expulsion, and that further interference was at present unadvisable. This conclusion was announced to the family and to the patient—much to the relief of all parties concerned. My experienced consulting physician was so positive that he went so far as to stake his professional reputation on the accuracy of his diagnosis.

Some slight pains followed the removal of the tent, but nothing like as severe as she had experienced before. At 7.30 P.M. I left the house, having ordered five grains of quinine and twenty drops of McMunn. At 8 o'clock the pains became more marked; at 9 they were so severe that I was sent for, but having gone to spend the evening with some friends, did not reach the house until 11 P.M., when I was informed that three-quarters of an hour before, a fetus of about three months had been expelled. There was no more hemorrhage than was desirable; the placenta lay in the vagina, and was easily removed; the patient made a rapid and good recovery, was subsequently married, became pregnant again at once, and has never miscarried since.

The first point of professional interest in the case is the possibility of impregnation occurring under the circumstances related above. And in this connection arises the question, Was the narrative a truthful one? I feel perfectly confident that the gentleman told me the exact truth, so far as he knew it, and I feel sure of it, not alone from my intimate acquaintance of the man and his character. The young lady went up-stairs immediately after the evening's occurrence, and the next morning made a *confidante* of her mother, relating the incident, not in the same words—as would have been the case had there been any collusion—but in all essential points telling the same story. Subsequently, while the young woman was so ill, the young man and myself occupied adjoining rooms at the hotel, and he was as anxious as mortal could be for the safety of his intended; so anxious that a week's care made his hair so gray that his friends all commented on it after his return home. During this time I frequently asked him whether he had told me the exact truth, explaining how much in the way of diagnosis and treatment, and, therefore, of the patient's safety, depended on his truthfulness. He never varied an iota from the history above given, and more than once, placing his hand on a Bible lying on the table in his room, swore to the accuracy of what he had

related, at a time when he firmly believed that the lady's life depended in great measure on what he said. Long afterwards, when he was safely married, the matter was again on one occasion referred to, and he still told precisely the same story. Now, incredulous as you may be, I fail to see how you could have stronger human testimony on any subject than we have on this.

It seems impossible that complete connection should take place with a woman's thighs held as closely together as they are by a pair of close drawers after they are unbuttoned, but not removed; and while the gentleman thinks it possible that his penis may have separated the labia, he is perfectly positive that at the moment of emission the organ was entirely outside, and the semen simply thrown against the vulva. My impression is that impregnation would seldom result if the spermatozoa had not a proper motion of their own, and a life of several days under favorable circumstances.

The case would seem to teach, then, that pregnancy may ensue when the semen is simply thrown against the vulva, and afterwards most of it wiped off.

CASE OF CESAREAN SECTION, WITH RECOVERY OF THE MOTHER.

BY

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THE renewed interest recently awakened in the operation of Cesarean section by the researches of Dr. Robert P. Harris, of Philadelphia (see *Am. Jour. of Med. Sciences*, and this JOURNAL), and the revival of laparo-elytrotomy, as well as the fact that during the past 250 years no successful Cesarean operation was reported in the cities of New York and Brooklyn,¹ lead me to report the following case:

Mrs. V., age 30 years, the mother of two children, the youngest three years of age, was taken in labor at one o'clock on the morning of November 17th, 1874.

Dr. A. C. Hallam was called to attend her two hours later, and upon examination found what at first appeared to be the head of

¹ It is only fair to state that during the first 210 years of these 250, the Cesarean operation was not performed at all in these cities.

the child, but which proved upon more careful investigation to be a fibroid tumor which completely filled the vagina, the head of the child presenting above the tumor and reachable with great difficulty.

Recognizing the gravity of the situation, Dr. Hallam requested them to send for the physician who attended her in her previous confinement. Dr. Pendleton was accordingly called, and at his suggestion an attempt was made to deliver with forceps. The tumor being pressed firmly up, the head was with great difficulty seized and the forceps locked. It was then found that upon the slightest traction the tumor advanced and occupied its former position, making an advance of the head impossible.

Upon further consultation with Drs. Delong and Wakefield, craniotomy was discussed and declared impracticable.

The Cesarean section being the only chance left for the patient, at Dr. Hallam's request I was sent for.

I saw the patient at ten o'clock A.M., she having been five hours under the influence of ether and chloroform.

Her condition was one of extreme exhaustion; in fact, she was almost in articulo mortis. No time was lost in giving her the only possible chance, slight as that seemed to be. The usual incision was made through the linea alba, and the uterus exposed. I then carefully divided the uterine wall and delivered the fetus by the breech. The placenta was then carefully separated and delivered without difficulty.

There was little or no hemorrhage, the uterus immediately contracting firmly, until the incision appeared not more than two inches in length.

No sutures were used in closing the wound in the uterus. In closing the abdomen, four deep sutures of silver wire, which included the peritoneum, were used; the outer edges were carefully drawn together by silk sutures, and the wound covered with lint saturated with carbolized oil.

The patient bore the operation well, and came out of the prolonged anesthesia without any unpleasant effects, entirely unconscious of anything that had transpired during the previous seven hours.

The progress of the case from the time of the operation until December 9th was not marked by any unfavorable circumstance. She was kept moderately narcotized with morphia, took nourishment freely, and complained but little of pain, the temperature never rising above $102\frac{1}{2}^{\circ}$.

The catheter was used regularly at intervals of eight hours.

On December 9th she had a sharp attack of phlegmasia dolens,

which, however, yielded slowly to appropriate treatment, and the recovery was complete.

It is but just to say that the successful termination of the case was largely due to the untiring and skilful care of Dr. A. C. Hallam, under whose care she remained during the entire period.

A CASE OF AMPUTATION OF THE CERVIX UTERI BY THE GALVANO-CAUTERY, FOLLOWED BY PREGNANCY.

BY

JEROME ANDERSON, M.D.

Hill Ferry, Cal.

I AM induced to place this otherwise simple case on record, for the sole reason that very high authority (Dr. Thomas Addis Emmet, I believe) claims that cicatricial contraction and sterility are the almost invariable consequences of amputation of the cervix uteri by the galvano-caustic wire.

Mrs. Hirschfeld, a German Jewess, æt. 38. One child at term 12 years since; several subsequent abortions.

The patient came under my care in March, 1876, suffering from "womb disease" of ten years' standing. Upon examination the cervix uteri was found to be hypertrophied to about twice its normal length and diameter, and reaching to within $1\frac{1}{2}$ inches of ostium vagina. The enlargement was most marked on the anterior lip, which was fissured so deeply in places as to simulate the appearance of the external os. There was a profuse, continuous discharge from the glands of Naboth, and extensive excoriation and ulceration of the cervix. The hypertrophied tissue was of almost sclerotic hardness and irregularly nodulated. The uterus was of normal length beyond the internal os, but sensitive to bi-manual manipulation.

After several weeks of unavailing conservative treatment, I determined to remove the cervix uteri. I chose the galvano-cautery operation, and selected Trouvé's zinc and carbon battery.

The patient being etherized, the loop of wire was thrown around the cervix as far up as the base of both cul-de-sacs; care being taken that the uterus retained as nearly as possible its normal position. The current was turned on, and the entire cervix re-

moved, by slowly tightening the wire; with the accident, however, of cutting nearly a third of it with a cold wire, caused by my assistant removing the piles from the fluid during the operation, through mistaking his instructions. This portion, which bled profusely, I promptly cauterized with a platina button.

There was no shock or fever following the operation, and my only difficulty was in keeping the patient in bed until the danger of secondary hemorrhage had passed. On the fourteenth day, the cauterized surface was entirely healed, but unauthorized sexual intercourse at this time caused abrasions which required a month more to heal. The menses occurred regularly, and after two periods caused no disturbance, and the patient seemed entirely restored to health. Both she and her husband, however, complained of a complete lack of sexual feeling following the operation. This has, in part at least, been restored.

On February 11th, 1878, she stated to me that she had missed her menstrual period, and believed herself enceinte. I coincided with this belief, but expected an early abortion. This did not take place, and at $4\frac{1}{2}$ months she experienced decided motion. The uterus at this period presented no appearance of an os. At seven months, there was a gush of water, followed by irregular pains. The womb at this time presented an opening at the site of the internal os, through which the finger could be introduced and the child's head felt. The membranes seemed intact. This orifice remained patulous up to the time of her delivery.

On October 19th, 1878, at 280 days from the date of her pregnancy, she was delivered of a healthy male child, weighing 7 pounds. I was not present at the delivery, owing to the distance at which she resided. The midwife informed me that the labor was extremely short; there being but two or three severe pains. Upon careful examination I discovered that the uterus had been lacerated during the labor at two points, which radiated from nearly opposite lateral portions of the orifice, and extending about three-fourths and one inch respectively upward and outward. The line of laceration at each point was irregular. The uterus contracted well, the secretion of milk was profuse, the lochia normal, and both mother and child are doing well.

ACCIDENTAL RETENTION OF A CATHETER IN THE SAC OF AN
OVARIAN TUMOR FOR ONE YEAR; REMOVAL AND RECOVERY.

BY

J. FEWSMITH, JR., M.D.,

Newark, N. J.

PATIENT presented herself to me on Sept. 26th, 1878, with the following history, given with the greatest clearness, intelligence, and apparent accuracy. She was of German descent and 24 years old. Family history very good. She first menstruated at 12-13 years of age, and was always very regular, though at each epoch she suffered great pain. July, 1870, when 17 years old, she married and went to Switzerland, where she was confined in October, 1871. She was in the Alps, amid snow and ice, with no physician and was in labor six days (!), struggling at times in the agony so that it required several persons to hold her. Labor over, she stayed quietly in bed for nine days, nursed her child two weeks, weaned it, and menstruated six weeks after its birth. From this time on to 1876, she was very regular in menstruation, though it was always painful and followed by much leucorrhea. Shortly after her confinement she began to have great pain in right side and hip. There was some abdominal enlargement, but she says her friends told her she was always large there and when pregnant she was enormously distended. In 1873 she returned to Newark, and was much benefited by the voyage. She went to California and her husband died near the end of 1873. Early in 1874, she was taken with severe pain in back and abdomen and in bed for five months, treated for "inflammation of the womb." No vaginal examination was made. In 1875, she had another attack of the same kind. She now noticed that she became very large at menstrual epochs, but was smaller in the intervals. Up to this time the pain was severe only at menstrual epochs and these were still perfectly regular. In 1876, she had a severe hemorrhage from the uterus and, for the first time, was locally examined by Dr. Seelye, of San Francisco, who told her she had something growing on the womb and treated her for three months by local canterizations. She at this time began to take morphine. In August, 1876, she married again and went to Virginia City. The day after marriage she was taken with intense pain in the region of the kidneys. She fainted and was in bed for a week. She states as positive that since the first night with her

husband she has had absolutely no sexual connection with him—he being frightened at her sickness the next day—so that that one night is the only coitus which has taken place since 1873. From this time on she was pretty well until the spring of 1877, when she missed her menstrual epoch. She called in Dr. H., of San Francisco, and he found a hard tumor, size of a man's fist, in the median line, over symphysis pubis—thought it a case of retention of urine, catheterized and got no water. Diagnosed fibroid of uterus. Patient refused further treatment and went to several other physicians in San Francisco, whose opinions varied between inflammation of the bladder, ovarian or uterine tumor. She had no difficulty in passing water, but it was dark-red. Finally Dr. S., of Sacramento, was called in on account of pain at what should have been a menstrual epoch. His examination—with probe—caused her great pain. She was unable to get up after it. Inflammation set in. Pain became continuous and intense and the abdominal tumor grew very rapidly. Dr. G. G. Tyrrell was then called, and treated her for some time for abscess of the womb (according to her statement), giving her at the same time large doses of morphine. The tumor becoming very large, Dr. Tyrrell, in consultation with Dr. Nelson and others, aspirated and drew off a gallon of clear, reddish fluid. This was in August, 1877. In three weeks the tumor refilled, and the doctor tapped again, getting only about a pint of bloody fluid. After this she was very sick, had intense pain and was kept for six weeks almost entirely under the influence of morphine, taking as high as 13 grs. (?) per diem. About six weeks after, the tumor was again tapped with no result. After consultation it was decided to operate through the vagina, and in October, 1877, an incision was made into the tumor through the vagina and a large basin full of *pus* drawn off. The next day a catheter was put in as a drain and the sac washed out. Patient says that then for a day or two the doctors *tried to dilate the opening and finally said they had lost it*. The discharge of *pus* continued. She stayed in bed till Christmas, then was up and about, though very weak, till March, 1878, when she was taken with pain in the side and kidneys, forced to increase her morphine again and to stay in bed till carried on board the steamer for New York, where she arrived April, 1878. The voyage improved her, and she cut down her morphine to 2 grs. a day. She continued quite comfortable till the middle of September, when she began to have intense, lancinating pains in the right groin and right iliac region. The discharge also increased. For this she came to me on September 26th, 1878. Giving her anodynes and warm local applications, I postponed an examination until

October 1st. Then, passing the finger into the vagina, I felt, on the right side of the cervix, a peculiar, stiff sharp point, seeming like a twisted wire. I seized it and made gentle traction till it reached the vulva, when I made it out to be an old elastic catheter. Slight traction removed it entirely, and it proved to be a whole English catheter, size 8, curled in a double S shape. It was not accompanied by much discharge. From its appearance it must have been retained a long time. The patient was too evidently astonished at seeing it to have put it there herself, and she had been out of doctors' hands for a year. I questioned her closely about the operation, and she said unhesitatingly that that was what the doctors must have been looking for during four days in succession. The uterus was in pretty good position and the cervix about normal. There was great tenderness over the whole right periuterine region, and also in the right iliac region, so that I postponed a more careful examination. Treatment was based on the idea of a suppurating sac having been kept in action by the presence of a foreign body, and I hoped that now this was removed the sac might become obliterated. I gave warm, antiseptic injections, warm applications to abdomen and as small a quantity of morphine as possible. Patient had a chill, and, for some nights, copious sweats, but these were overcome by quinine and acid. sulph. aromat.

To settle my doubts as to the catheter, I wrote to Dr. Tyrrell, of Sacramento, and the following is a quotation from his kind reply: "The case was one of ovarian tumor, nearly centrally situated in abdomen, extremely painful, and from its tenseness diagnosed by other physicians as a fibroid of the uterus. To clear up this point, I aspirated it and drew off a basinful of straw-colored albuminous fluid, presenting under the microscope the so-called characteristic cells of Drysdale. The tumor soon refilled, and I again aspirated and drew off about a quart of sero-sanguinolent fluid. On its refilling for the third time, I concluded to make an opening in Douglas' cul-de-sac and, if possible, remove the growth that way, or at least see what could be done. Accordingly, I punctured with a large trocar and drew off a basinful of pus. My colleague, Dr. Nelson, proposed that we pass in a catheter and leave it to drain. He did so pass one through the trocar, when the ivory tip came off, and the catheter was pushed into the sac, or rather slipped in when the trocar was withdrawn. All efforts to recover it were in vain, and we were forced to give up the search, in hopes that Nature would send it once more to the surface." Then follow accounts of the search on the succeeding days, corroborating the patient's story in every particular. The operation was performed October

2d or 3d, 1877, and the catheter removed Oct. 1st, '78, having thus been retained in the woman for one year less two days. It probably remained during that time in the sac of the ovarian tumor, as it made its way out nearly at the point of entrance.

On October 15th, '78, the patient had a slight discharge of blood with sensations of menstruation, the first sign of such a thing since '76 or early in '77. At that time examination showed diminished tenderness, both on pressure on the abdominal walls and from the vagina. A hard lump, about the size of a fist, was to be felt just above the symphysis. It seemed to me most like a distended and thickened bladder, but patient's water was passing normally.

October 28th, I found the lump nearly gone. Patient states that when she omits her morphine, it returns and she has great dysuria. A catheter passed into bladder finds urethral and vesical walls very irritable, but no further lesion—urine concentrated—nothing abnormal. The tenderness almost gone, the discharge very slight. What there is seems to come from a point posterior to a sort of band of tissue which runs from a thickened portion of the cervix (anterior lip, right side) across to the vaginal wall, but I can find no opening.

November 6th, while straining at stool, patient felt a gush of something and passed from the vagina about half a cupful of pus with dark lumps in it.

To pass over further notes, the patient from that time on has continued to improve, has entirely ceased from the opium habit, has menstruated regularly, has no trouble in urination, is growing plump and rosy. She says she feels better than ever before. She had a hard fight with the morphine, and suffered once from what I feared would be a general peritonitis. The discharge ceased entirely about December 20th. I believe the tumor to be entirely removed, the sac obliterated, and the case cured, and question whether it may not furnish a valuable hint for treatment in other cases.

CORRESPONDENCE.

HYDRATE OF CHLORAL AND BROMIDE OF POTASH ENEMATA IN THE VOMITING OF PREGNANCY.

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

I PUBLISHED in the *Medical Record* of May 15th, 1874, the history of 4 cases of severe vomiting during the first month of pregnancy, as relieved by the administration of chloral hydrate by the rectum, in portions of from 20 to 30 grains, dissolved in gum water.

I call the attention of the profession again to this method of treating these often very distressing cases, because I am more and more convinced of its great value, from repeated trials of it since. The Japanese physicians, whom I have instructed in its use, also report very favorably on it. In fact, they confidently inform me that it rarely fails.

Since the first few cases in which I advised its use, I have learned that the bromide of potash, in equal proportions with the chloral, adds to its efficacy. I have also learned that in some cases the remedy must be pushed to a moderate degree of narcotism in order to secure the desired result. The amount of each portion of the drugs and their frequency of administration depends, therefore, on individual susceptibility to its influence, and must be prescribed accordingly. I also advised its use in obstinate vomiting from other causes. Following this suggestion, it was administered by one of my colleagues, Dr. Stewart Eldridge, in a case of vomiting from local peritonitis which had resisted all other modes of treatment. The result was most satisfactory, indeed, almost magical.

I stated, in the article referred to, that I had nowhere seen the use of chloral for this particular purpose mentioned. Neither have I been able to find it since. I shall therefore claim to have first used and recommended it, till some prior one is established.

D. B. SIMMONS, M.D.,

Chief Surgeon to Ken Hospital, Yokohama, Japan.

DECEMBER 12TH, 1878.

HOW DILATATION OF THE URETHRA CURES CYSTITIS IN
THE FEMALE.

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

IN a discussion by the New York Obstetrical Society of the dangers of dilatation of the urethra (this JOURNAL, October, 1878, pp. 786-789), Dr. Skene asks: "What benefit is obtained for the cystitis by the operation?" As a possibly satisfactory answer to this question I beg leave to offer the following:

Not the least common affliction of the hyperesthetic female is spasm, reflex if you will, of the urethral sphincter; that band of muscular fibres which surrounds the first few lines of the canal just within the meatus. The hypertrophy determined by this spasm frequently renders the sphincter more than a match for the bladder, as thus this organ becomes unable to expel its contents without the assistance of the abdominal muscles. As the vesical globe diminishes with the escape of urine, the action of these muscles becomes less and less effective, until a point is arrived at where the water ceases to flow, although the bladder is not completely emptied. (To verify this fact it is only necessary to cause one of these patients to pass all the urine possible by the voluntary effort and then introduce a catheter.) Result—the constant presence in the bladder of more or less residual urine which sooner or later undergoes putrefactive changes, and, just as in the parallel condition produced by enlarged prostate in the male, then comes cystitis. Now when we dilate the urethra, we overdistend the sphincter, break up the spasm, enable the bladder to completely empty itself by its own intrinsic muscles, and thus fulfil the first indication of treatment, removal of the cause.

In my own cases, two, to be exact and numerical, I have been completely satisfied with the results of simple dilatation of the urethra by means of the left, as the smaller, little finger. With the patient under ether, gentle and sustained pressure will soon engage the apex of the finger in the meatus in most cases, if the member be not above the average size. I well remember the surprise that I experienced in my first case at finding that no point in the canal offered the least resistance to the finger except the sphincter urethræ, and I then and there took leave of that anatomical myth, the sphincter of the vesical neck. Perhaps those who still

believe may find occasion to modify their views concerning even the "physiological" existence of a sphincter at this point, if they will pass a finger into the female bladder without the prior use of a dilator.

Yours, etc.,

PORTSMOUTH, VA., Oct. 15, 1878.

JAMES PARRISH.

LACERATIONS OF THE CERVIX UTERI.

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

MY DEAR DR. MUNDE:—My attention has been directed to a certain paragraph in your most excellent article on "*The Indications for Hystero-Trachelorrhaphy, or the Operation for Laceration of the Cervix,*" and I send you this communication, more to corroborate the correctness of your views than to assert any especial priority. After mentioning the papers of Emmet, Wing, Baker, Breisky, Dudley, and myself, you state that "a careful perusal of these papers shows me, and the diagrams referred to confirm this impression, that all the authors who have hitherto written on this subject, speak only of COMPLETE laceration or fissure of the cervix," etc., etc. In your search for the literature of the subject, you have omitted a paper written by me in 1873, read before the Missouri State Medical Association in April, 1874, and published in the Richmond and Louisville *Medical Journal* for May of the same year, entitled "*The Accidents of Parturition requiring Surgical Treatment.*" For many years, certainly since 1868, I have taught the various classes of medical students to whom I have had the honor to lecture, and have incorporated the doctrines in extenso in the paper referred to, *that it was sound practice to close all cervical fissures or lacerations, if there were any tendency to the so-called ulceration or granular erosion.* As you have given considerable impetus to a renewed interest in the study of the operation for laceration of the cervix, I beg your attention to the subjoined quotations from my paper on the subject:

"*Lesions of the cervix.*—In rapid labors, resulting from very active uterine contractions, or from ergotism, or from unskilful instrumentation, the fetal head may be driven or dragged through the external (and sometimes internal) os, where sufficient dilatation had not taken place, and a laceration ensues which is frequently *productive of no more harm than a slight hemorrhage* and some subsequent surgical fever, sometimes mistaken for puerperal metritis. Should laceration, however, *extend as far as the*

vaginal junction or above it, serious and sometimes fatal hemorrhage ensues. . . .

“Symptoms of laceration of the cervix.—Hemorrhage is the chief symptom, but shock is apparent where the rent is of much importance; but, as this condition may ensue in many deliveries without cervical lesion, it must be considered only in connection with feeble and frequent pulse, coldness of the extremities, fainting, etc. No accoucheur would witness these symptoms without examining the hypogastrium of the patient; and, finding the uterine globe firm and well contracted, he might be at a loss to account for them until he made further examination of the pudenda, when he would discover a very considerable quantity of blood upon the bed, and the vagina filled with clots. Unless he suspects the cause of the loss of blood, he might order opium and stimuli, enjoining quiet, hoping the mischief had all been done. While he waits in hope, the patient bleeds, and may die. Therefore, instead of waiting, it would be proper to explore and see if the perineum, rectum, vagina, or vulva were lacerated; any of which accidents might give rise to serious losses of blood; and, failing to find these lesions, but discovering that the vagina gave issue to much blood, notwithstanding it was filled with clots, the finger passed to the cervix would easily recognize the laceration. Clearly, the blood must come from some point *below the body of the uterus, which is firm and well contracted*; it does not well forth from a lacerated perineum, rectum, vagina, or vestibule, therefore it cannot come elsewhere than from a lacerated cervix, even if the touch be not sufficiently educated to recognize it.

“Treatment.—The treatment is immediate when the hemorrhage is profuse, and it requires a tampon, local application of the sesquichloride or persulphate of iron, *or coaptation with sutures*. If the accoucheur has not the preparations of iron or the silver sutures in readiness, he then might apply the tampon, AND THIS IS THE ONLY FORM OF POST-PARTUM HEMORRHAGE WHERE SUCH TREATMENT IS APPLICABLE. The clots should be turned out, and a large sponge, sufficient to emesh itself in the wound, wrung out in alum-water, should be applied, and the vagina packed to the external orifice with wads of cotton. The disadvantages of this treatment are, that the production of styptic mechanical thrombosis of the vessels is apt to be followed by suppuration and pyemic fever.

“The urine must be drawn off regularly every five or six hours, because the urethra is compressed by the tampon which fills the vagina to its utmost capacity. The styptic tampons cannot be interfered with for several days, and as a consequence the decom-

position of the lochial discharge begets a most offensive odor. After suppuration has been established, the tampon wads should be removed and the parts syringed every few hours with tepid water, followed by a solution of permanganate of potash, ten grains to the ounce. . . .

“Coaptation with silver sutures, when practicable, is the best form of treatment, because it will in all probability prevent suppuration and *ultimate cervical fissure*.

“The coaptation consists in stitching the rents as accurately as possible with the silver sutures, and first suggested itself in a case of a lady, a brother of whom had died from epistaxis, and who had herself on two occasions been very much prostrated from the same cause.

“I saw this patient very soon after her delivery, which presented nothing unusual as far as the mechanism of labor was concerned, but a persistent hemorrhage ensued which was telling upon her strength. The tampon and styptic sponges were tried, but to no avail. The hemorrhage persisted to such a degree that it was imminent. With the consent of the accoucheur in charge,¹ I placed her in the left lateral semi-prone position and introduced a Sims' speculum, cleansed the wound as much as possible, and found a rent on the left posterior margin of the oval disc, extending upwards and backwards on a line with the sacro-iliac synchondrosis, a little less than two inches in extent. Five silver sutures were passed from above downwards (the third one very deeply through the tissue of the cervix alone, the others above having embraced the fornix of the vagina, the lowest two more superficially), and the parts were accurately coapted. The bleeding ceased instantly, and the patient made a good recovery. . . .

“*Whatever form of laceration the cervix may undergo, coaptation evidently tends to the best results, either immediate or subsequent.* Laceration of the cervix uteri during labor is a *much more frequent accident than is generally supposed.*

“Many cases present themselves to the gynecologist complicated with laceration of the perineum. We can readily understand how the perineum is ruptured on such an occasion, as the sudden giving away of the cervix uteri permits the head to engage and to unduly press upon it before distention by the sweep of the occiput, and the strong expulsive efforts of the uterus continuing, it frequently gives way under such powerful forces.

“If, after treatment of the lacerated cervix by the method of coaptation, union should not have taken place, the patient finds

¹ Dr. W. R. Samples, of St. Louis, Mo., June, 1870.

herself with a fissure of the cervix, *which rarely, if ever, unites.* In many instances retroversion takes place in consequence of the loss of symmetrical sustentative power, or is induced by relaxation or even rupture of the utero-sacro-lumbar ligaments. I have seen retroversion rectified after an operation, reparative of the solution of continuity. Many of the cases reported by the older writers on uterine diseases, such as Bennet, Ashwell, Meigs, Lisfranc, and Jobert (de Lamballe), as ulceration with enlargement of the cervix, were evidently fissures covered with (papillary hypertrophy) granular erosion, and which were not recognized by examination with the old-fashioned tubular speculum. One can, therefore, readily imagine the difficulties encountered; and the numerous trials which beset the earlier gynecologists who attempted to 'melt down' hypertrophy, and who succeeded only when a large portion of the intravaginal portion of the cervix had sloughed away. By means of the Sims speculum, or any of its modifications in the shape of a perineal retractor, together with a couple of tenacula, there is no trouble whatever to diagnosticate fissured cervix by simply drawing the irregular and jagged edges together. *These cases may be temporarily benefited by the usual treatment, but the constant friction of the parts begets a new attack in the course of a few months. It may be safely stated that a cure without surgical procedure should never be anticipated, and the converse holds true, that an operation rarely, if ever, fails to bring about a complete restoration of the integrity of the cervix, as well as an amelioration and cure of the patient.*

"The operative procedure here is quite simple; it consists of complete denudation of the cicatricial and ulcerated (papillary hypertrophy) margins, and their approximation (as in hare-lip), and retention by means of silver sutures. Annealed iron wire is possibly as good. The difficulties of the operation consist in thoroughly freshening the edges about the upper angle of the fissure, but to accomplish this, the surgeon must be provided with scissors and cutting pliers of all shapes, so that the most tortuous and sinuous track may be reached. The passing of the needles is somewhat troublesome, as the tissue of the cervix is dense and tough, and the space for action quite limited. Short, stout and straight needles, not more than five-eighths or three-quarters of an inch in length, *trocar pointed*, are passed very easily. These needles should be armed with a loop of fine strong silk thread, not waxed and without any knot, to which is attached a tapered silver wire. As many sutures are passed as the surgeon may think proper, but certainly one to every three lines of surface

denudation. It may not be amiss, whilst speaking of needles, to mention that the very finest cambric needles, cut short, and pointed like a trocar, together with the fine, non-knotted loop of silk, and the tapered wire, have done very much towards simplifying the modus operandi of vesico-vaginal operations, from the fact that the main portion of the wire is larger than the needle and thread, and fills the puncture so exactly that no urine can dribble through."

I would also beg to fully indorse your views concerning "the slighter cases of laceration being operated upon in our offices or at the Dispensary," etc. For quite a number of years I have frequently performed this operation in my clinique at the University, and Dr. Von Ramdohr, my assistant, tells me that in no instance did we have any untoward results, but on the contrary, every case was successful. In the majority of these operations, silk sutures were used instead of silver wires. Very respectfully,

MONTROSE A. PALLER.

9 W. 29th STREET, NEW YORK, Feby. 12th, 1879.

IS THE FLUID OF POLYCYSTIC OVARIAN TUMORS BLAND OR ACRID?

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

IN your excellent JOURNAL for January, 1879, I notice in the "Transactions of the Obstetrical Society of Philadelphia" (p. 174), referring to the prognosis of ruptured ovarian tumors: "It is thought that the fluid of unilocular cysts is, as a rule, bland and unirritating, . . . while the various contents of polycystic growths have been shown to be extremely acrid, even corrosive to steel." While that deduction may be generally true, yet, if we recognize *facts* as the only true basis of any general rule, and as facts can only be aggregated by the reports of cases, it follows that the more reported, the more nearly correct will be the general rule deduced. I therefore beg to add my mite to the general fund of facts, by reporting (as far as it bears upon the subject under consideration) a case of ovarian tumor, on which I operated in February, 1876, in presence of and assisted by the members of our County Medical Society (the day of the operation being that of our regular monthly meeting). The patient, Mrs. L. D., stated that three days before,

while attempting to get into her carriage, she fell, striking her side against the iron step, rupturing the tumor, as she supposed, from its immediate change of position. On opening the abdominal cavity, we verified her statement. The tumor, which weighed twenty-nine pounds, was multilocular, and a large part of the contents of the largest cyst, a colloid substance of about the consistence of calves-foot jelly, was found to be free in the abdominal cavity. The cyst was largely adherent to the abdominal wall and viscera, which adhesions, however, I broke down by manipulations, no dissection being necessary. The outer walls of the cysts were thick, while within they were honey-combed, the septa being thin and easily broken down by the fingers. Their contents I had to scoop out with my hands to the amount of more than half an ordinary pailful. The pedicle was secured on the outside by a Spencer Wells clamp, the free jelly scooped out of the abdominal cavity by hand, the bowels and other viscera very carefully washed with carbolized water at 99° Fahrenheit, and the incision, 5½ inches long, closed by six deep and five superficial sutures. The wound healed by first intention; *there was no peritonitis*, and the patient made a good recovery, and is now a strong, healthy woman. I may state that there can be no doubt of the rupture of the tumor as stated, as the opening was directly beneath the spot on the skin marked by discoloration, where the patient said she had struck the carriage-step, which spot was at least three inches from the line of incision. As the case was fully reported in the *Canada Lancet* (June, 1876), I have only used such portions of the report as I think necessary to establish the facts, that the tumor was "polycystic, and that its contents were not acrid nor corrosive," but were eminently "bland and unirritating," as, had they been otherwise, having been free in the abdominal cavity for three days, peritonitis would unquestionably have supervened, especially when account is taken of the manipulation, washing, etc., of, and the length of time, the viscera were necessarily exposed to the action of the air before the operation was completed.

Yours very truly, T. R. BUCKHAM.

FLINT, MICH., Feb. 21st, 1879.

TRANSACTIONS OF THE OBSTETRICAL
SOCIETY OF NEW YORK.

Stated Meeting, June 11, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

VESICO-VAGINAL FISTULA IN A GIRL EIGHT YEARS OF AGE.

DR. GILLETTE reported a case, with special reference to treatment. It was a case of vesico-vaginal fistula, in a girl 8 years old. The fistula was transverse. She was picked up on the street by some of the Sisters, and brought into St. Francis Hospital. Her condition was most distressing, as there were excoriations over the entire length of the thighs and legs. The girl said that a doctor had cut into her, and removed a stone from her bladder, and since that time she had not been able to control her water.

The fistula commenced about four lines from the entrance of the meatus urinarius, and extended to the left and backwards.

About four weeks ago, Dr. Gillette attempted an operation, but it was with the greatest difficulty that anything could be accomplished, on account of the small vagina. Two stitches, however, were introduced, and with good results, because for a short time she was able to retain her urine.

A second operation was performed, which resulted in the power of retention for 8 hours in the recumbent position.

It had occurred to him to attempt a third operation in the following manner:

First, Divide the perineum, with the view of obtaining more space and removing the possible tension of the parts;

Second, To make the operation for closing the fistula; and

Third, Operate for restoring the perineum.

For the first step, however—dividing the perineum—he had no authority, and asked the opinion of the Society with reference to its feasibility.

DR. NOEGGERATH said that the operation suggested by Dr. Gillette had already been performed; that no harm probably would come from it, but he could not see that much would be gained by dividing the perineum, since at that age the space would be but little increased.

Stated Meeting, October 1, 1878.

DR. H. F. WALKER, *Pres. pro tem., in the Chair.*

CASE OF PAINLESS LABOR.

DR. GILLETTE reported a case having the following history:

He was called to attend a pregnant lady, who had been insane at times within the past five years; so much so, that on one or two occasions she had been sent to an asylum. During her pregnancy there was no manifestation of mental aberration, except, perhaps, an undue irritability.

On the morning on which her labor commenced, the doctor was sent for in great haste and found his patient dressed in a morning wrapper and sitting in a chair. She simply complained of a sense of uneasiness, yet was certain that she was then to be confined. She said she had no pain whatever, and in reply to a question, said that she had sent for the doctor simply because she wished to know whether or not he was at home. While talking with her, the doctor noticed that she occasionally ceased conversation; that at the same time her face became flushed, and that she raised her hand and shook it. That manifestation was repeated at intervals of about two minutes.

It occurred to Dr. Gillette, that perhaps labor was progressing, and that the woman was not aware of it. An examination was suggested. At first, the woman refused to comply with the request; but when it was insisted upon she yielded, and it was found that the os was entirely dilated; that the head was well down in the pelvic cavity, and that the membranes were unruptured. The woman was placed in bed, the membranes were ruptured, and the progress of the labor carefully watched. At intervals of a few moments the abdominal walls were felt to contract, and when that occurred, the woman simply raised her hand and shook it in the manner described. There was no pain, and for that reason the woman would not believe that she was in labor. At the end of about half an hour, however, she insisted that the forceps should be applied. The doctor at first firmly declined to use the forceps. The woman at once became almost maniacal. Dr. Gillette then sent for his forceps, applied them without difficulty, and delivered the child safely. The woman refused to take chloroform, but during the entire time continued to manifest the reflex phenomenon of shaking her hand. As soon as the child was delivered, the phenomenon ceased, and the woman made a good recovery.

The point of interest in the case was the peculiar manifestation

of uterine action, and the absence of the usual pain attending uterine contractions.

Dr. Gillette thought the phenomenon was due to her mental condition, and that it would not have been manifested had the woman's mental condition been normal.

The reflex muscular movements affected only the right hand and fore-arm.

In answer to a question, Dr. Gillette remarked that his patient had suffered from mental aberration once between the births of her other children.

He further remarked that he had seen cases in which the first stage of labor was painless, but that he had not seen a case in which the second stage of labor was as painless as in the one related.

DR. HANKS raised the question whether it was a fact that a majority of insane women were sane during the period of utero-gestation. It was his opinion that such was the case.

DR. MUNDE thought that no reliable observations had been made in that direction. Certainly, if it were true that pregnancy temporarily cured insanity, the therapeutic indication was obvious.

DR. GILLETTE referred to two insane women who were delivered at the Maternity Hospital on Blackwell's Island, but in neither case was there any manifestation of puerperal mania. He was not able to understand how chronic mania could be benefited by pregnancy.

DR. PAUL F. MUNDE reported a case of

TUBO-UTERINE PREGNANCY, WITH SPONTANEOUS DELIVERY OF THE
FETUS PER VIAS NATURALES,

which he saw in consultation with Dr. C. Williams, on Sept. 19th last. The woman had not menstruated since May 28th, immediately after which period she married. Soon after, two of the usual symptoms of pregnancy, morning sickness and frequent micturition, developed, accompanied during the last 3-4 weeks by occasional sharp pains in the left hypogastric region. Dr. Williams was called, Sept. 18th, on account of a quite free metrorrhagia, which had come on apparently spontaneously. An examination revealed to him a state of affairs which he believed due to extra-uterine fetation, and which led him to call a consultation. Dr. Mundé found the abdominal walls lax, the hypogastrium occupied by a broad irregular tumor, corresponding to the uterus at about the 4th month of gestation, the greater and more spherical part of which tumor (of about the size of a fist) lay in the left half of the pelvic cavity, almost touching the left ilio-pectineal line. The right half of the pelvis also contained a tumor of an oblong shape, which

was closely connected with and apparently formed a part of the left tumor, but which only partially filled the right segment of the pelvic cavity, easily allowing the fingers to be pressed between it and the brim. Pressure on the left tumor was very painful; the right body was firmer and scarcely sensitive at all. Per vaginam, a sharp antelexion of the cervix was found, the cervix moderately soft, os closed, but lips slightly everted. The pelvic cavity, all but a portion of the right half, occupied by a tense, smooth, convex tumor, the sinistral portion of which pressed against the left horizontal ramus of the pubis and, on conjoined manipulation, gave an obscure sense of fluctuation. On the right side, the line of the uterus could be followed up in an oblique direction towards the apex of the oblong tumor already mentioned. The whole mass was moderately movable. The feel of the cervix had already given a suspicion of previous pregnancy, which was confirmed on examining the nipples, the patient confessing to having born and nursed a mature child several years before her marriage. No line of separation could be detected between the left spherical tumor and right elongated body, but by conjoined manipulation a depression similar to that felt at the fundus in a light degree of uterus bicornis could be felt in the median line.

The question now arose, What evidence is there that this is anything abnormal? That the woman was pregnant seemed unquestionable, and that the uterus did not present the usual regular outline of a 3-4 months' gestation was equally certain. There might be one of three conditions present: 1. Normal pregnancy, with sacculation of the left anterior wall, such as is occasionally seen during the later months and during labor; whether this condition occurs during the early months when the uterine walls are still thick appears doubtful. 2. Uterus bicornis, with pregnancy in the left horn. 3. Left extrauterine gestation, tubal or interstitial.

After a repeated examination on the following morning, and a careful consideration of the probabilities, it was decided that the chances lay between extrauterine pregnancy and uterus bicornis; but in favor of the former as more common and more likely, in view of the patient having already had a normal labor. Normal pregnancy was entirely excluded, on the strength of the physical signs. In order to render the diagnosis certain and determine the treatment called for, if any, it was decided to run the risk of a cautious introduction of the sound, withdrawing it at once if an obstacle was encountered. The sound entered the uterine cavity almost by its own weight, the point passing distinctly to the right to the depth of 3 inches, and being discernible through the abdomi-

nal walls, at the apex of the oblong body previously supposed to be, and now certainly the uterus. The uterine cavity was distinctly felt by both Dr. Mundé and Dr. Williams, who repeated the operation, to be empty: the point of the sound could be passed about $\frac{1}{4}$ inch farther towards the right cornu than when turned to the left, thus giving the sensation of greater fulness of the left side. No pain whatever attended or followed the sounding. Thinking the diagnosis of extrauterine pregnancy, probably tubal, now assured, arrangements were made to aspirate the sac per vaginam, according to the now generally recommended plan of active interference for the arrest of the gestation, as soon as the diagnosis is certain. The patient was put under morphine, and the next morning fixed for the operation. Towards morning, active pain with hemorrhage set in, and when the patient was seen, at about 9 A.M., it was found that she had just expelled a fetus of about 3 months' development. The sinistral tumor was found to have disappeared, all but an indistinct thickening, and the uterus had righted in the pelvis. The placenta was manually removed about $\frac{1}{2}$ hour later by Dr. Williams, who attempted to thoroughly examine the uterine cavity, with the view of determining the place of its insertion, but was obliged to desist by the sensitiveness of the patient. She made a good recovery.

Dr. Mundé said that he reported this case with great hesitation as one of extrauterine pregnancy, because he felt that the doubts which he had expressed to the gentleman, who had reported a similar case during the past winter (Chas. McBurney, *N. Y. Med. Jour.*, March, 1878), as to the possibility of a fetus being propelled into an unprepared uterine cavity by the thin, feeble walls of a dilated tube, and then born in a natural manner, applied equally to this case. Still, there might be some difference, for he did not believe this case to be a tubal pregnancy, but a *tubo-uterine*, where it was much more plausible that the contraction of the uterine muscles could drive the fetus into the cavity of the womb. (See diagram of Poppel's case of tubo-uterine gestation, in Barnes' Diseases of Women, 1878, p. 326.) Unfortunately, this case did not possess the immense moral support given the other case by the eminent specialists who corroborated the attending physician's diagnosis; but, in his own mind, the actual condition of affairs, as clearly determined by repeated examination, left no doubt of the correctness of Dr. Williams' and his diagnosis. That the expulsion of the fetus followed twenty-four hours after the sounding does not prove the contrary, because the hemorrhage, for which Dr. Williams was first called, showed that some expulsive effort had

already occurred, with partial detachment of the placenta (which could take place as well in the interstitial ovisac as within the uterus proper). The sound probably only hastened the inevitable termination, and that there was no ovum in the uterine cavity when sounded is beyond question. In this connection it might not be out of place to quote Barnes (l. c., p. 326), who says: "The uterine mouth of the pregnant portion of the tube may be dilated, so that the sac expands into the uterine cavity, constituting *tubo-uterine gestation*; or the tubal mouth dilating, the sac enlarges in the direction of the tube, constituting interstitial tubal gestation. *The first variety may end in a normal labor*, whilst the latter is likely to burst into the abdominal cavity." Parry states (p. 66) that the uterine orifice of the tube in Poppel's case, above referred to, was large enough to admit the finger; and that this observation is confirmed by those cases which went beyond the early months. Spiegelberg, in his recent text-book on Obstetrics (Vol. I., p. 314), says that occasionally the uterine orifice of the tube dilates sufficiently to permit the protrusion of the ovisac into the uterine cavity (as witnessed by Monteils-Pons and Braxton Hicks), from which it is expelled in the usual way. The possibility of the *modus operandi* claimed for this case is, therefore, abundantly demonstrated. As regards treatment, he certainly would, in a future case of tubal or interstitial pregnancy, act on the indication afforded by this case and proceed, without delay, to dilate the uterine canal and the orifice of the tube and thus endeavor to induce expulsion of the fetus *per vias naturales*, as first practised successfully by H. Lenox Hodge some ten years ago, (Parry p. 266).

Annual Meeting, Oct. 15, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

DR. WATTS presented a specimen of a

CYST OF THE MESO-COLON,

with the following history:

"Mrs. O. H., age 38 years, was admitted to the Roosevelt Hospital on April 24th, 1878, and gave the following history: She had always enjoyed good health until her present illness. Menstruation began at 15 years of age, and was in every respect normal. She married at 27, and has had four children, all her labors being natural. Since the birth of her last child, 18 months ago, menstruation has been regular until 6 months ago, since when it has occurred but twice, the last period having just ceased. Has no pain in defecation or micturition. After the birth of her first

child, 10 years ago, she noticed a *soft*, oblong swelling, about 6"x2" in the median line, between the symphysis pubis and umbilicus. This "lump" could be felt beneath the abdominal walls, but caused no prominence of the surface. It was fully movable in the abdomen, was never painful or tender, and has remained to the present time without having increased in size. Sixteen months ago, about 2 months after the birth of her last child, she observed a *hard*, round tumor, also in the median line, and projecting above the symphysis pubis. This last tumor has steadily increased in size, and has displaced the "soft lump" to the left. The tumor is not painful, except under pressure. During the past year the patient has lost flesh and strength rapidly. She is now fairly nourished, but has a poor appetite; the tongue is moist and furred and the bowels constipated.

Pulse is of good strength and not rapid.

The urine shows no evidence of any kidney trouble.

Physical Examination.—The abdomen is occupied by a spherical tumor, which is elastic and fluctuating, with very tense walls. There is dullness on percussion over the tumor, while above it and in both flanks there is resonance. The tumor is very movable—seems to lie just under the skin, as if it had protruded through an opening in the linea alba. The skin over it is so relaxed that it can be lifted up in large folds, and the tumor can apparently be lifted out of the abdomen by the hands pressing underneath it. On the left side of the cyst and adherent to it is the "soft lump" mentioned by the patient, which is evidently a portion of intestine, probably the colon. The tumor was made out to be unconnected with the uterus, which seemed healthy and of normal size.

A diagnosis of cyst of the ovary was made, and afterwards confirmed by Dr. Emmet, who saw the patient in consultation, and an operation for its removal was ordered and readily consented to by the patient.

The following are the measurements of the abdomen :

At level of ensiform cartilage, circumference of body	26½ in.
" " " umbilicus, circumference of body	32½ "
Midway between umbilicus and pubis, circumference of body, 17 "	
Ensisiform cartilage to pubis	38 "
Umbilicus to pubis	13 "
Diameter of tumor	14 "

The operation was performed on May 4th, 1878, there being present Drs. T. A. Emmet, Markoe, Mason, Hunter, Peabody, Bache Emmet, and the house-staff of the hospital.

The patient was etherized at 2.45 P.M. An incision was made

through the skin in the median line, when it was found that there was no opening in the linea alba, but simply an extreme thinning of the tendon. After dividing the peritoneum, the tumor was exposed, and was found to lie between the layers of the meso-colon, the descending colon lying upon its left side and attached to it by its posterior surface. By the advice of my colleagues, I proceeded to enucleate the tumor from its position between the layers of the meso-colon, it being the opinion that the cyst was one of the left ovary, which had developed in an unusual direction behind the peritoneum. The peritoneal covering to the left side of the attached colon was divided, and the cyst was removed entire by stripping off the investing layer of the meso-colon. There was no pedicle whatever. After the removal of the cyst, the left ovary (which could not be felt before) was found in its proper position and healthy, as was also that on the right side.

The cavity was carefully sponged out, but there was considerable oozing from its walls, and the edges of the incision in the meso-colon were stitched into the abdominal wound, which was closed with silver sutures, and in its lower angle a tent was inserted. It was thought that any blood which might ooze would escape into the pelvic cavity through a rent in the meso-colon, which was left open and could thus be evacuated.

The operation was performed under Lister's spray, and an antiseptic dressing applied.

The patient's pulse was quite weak after the operation, and $\bar{3}$ ij. of whiskey were given hypodermically, and she was placed in bed.

A diet of milk and beef-tea was directed, and opium pro re nata.

6 P.M. : Pulse 104, R. 24, T. $99\frac{1}{2}$.

May 5th.—Slept well and feels comfortable. Has had no vomiting. Temperature in evening 102° .

May 7th.—The dressing was removed. Complains of pain in left side of abdomen, and has severe tympanites. Temperature $102\frac{4}{5}$, tongue dry and furred. Removed tent and passed catheter to bottom of Douglas' cul-de-sac, but found no fluid there.

May 8th.—The patient made no complaint and took nourishment well and retained it, but the temperature continued to rise, and at 10.30 P.M. was $104\frac{1}{2}$. Affusion with water at 88° was applied for 20 minutes, eleven such applications being made during the next 36 hours, with the unfailing result of reducing the temperature $\frac{2}{5}$ to $\frac{3}{5}$ of a degree; notwithstanding the patient grew feebler and became semi-comatose at 11 A.M. on the 10th. The temperature during the last 2 days varied between 103 and 106° , being $106\frac{1}{5}^{\circ}$ about 2 hours before death.

Autopsy.—All the organs perfectly normal. Peritoneal surface dry and glazed in places and congested. No exudation anywhere on peritoneum.

Uterus and ovaries normal in position.

Small cyst of left ovary. Behind, the descending colon and sigmoid flexure, extending upwards to the lower border of the left kidney, and forwards and inwards to the line of incision of the abdominal walls, was a large cavity, 12 inches in length, whose walls were formed posteriorly by thickening of the loose subperitoneal connective tissue and lumbar fascia, externally and internally by layers of the meso-colon, and anteriorly by the colon and meso-colon.

This cavity was partially filled with rather recent coagula of fibrine, but contained no decomposing matter. Slight union of the abdominal incision had taken place. The fluid contained in the cyst was reported by Dr. Delafield to be clear serum. Although no pus or decomposed fluid was found in the peritoneal cavity, the general impression of the gentlemen present was that the patient died of septicemia.

DR. THOMAS reported a case of

INVERSION OF A NON-PUERPERAL UTERUS.

In the latter part of September, he was called to visit a patient at Dr. Blackwell's Infirmary.

The patient was the wife of a physician, was forty years of age, and the mother of five children. She had been in good health up to three years ago, when she began to menstruate very profusely, the flow continuing for 12 or 14 days and sometimes longer. Her menstrual flow became more and more excessive, and her husband finally employed a tampon, administered astringents, and resorted to other means which were ordinarily used to control hemorrhage under such circumstances. During the first eighteen months of the three years she went on very well, but at the end of that time she began to suffer from violent pains at each menstrual period. The pains seemed like the expulsive pains of labor.

The flow was so excessive, that the patient became almost completely exsanguinated.

About the first of July last, a new phase developed itself, and she was taken with what appeared to be the ordinary pains of labor. The expulsive efforts soon became very powerful, and the bleeding was so profuse that the woman nearly lost her life.

For the first time, a vaginal examination was then made, and the husband found a body in the os uteri, which felt something

like a tomato. He became thoroughly frightened, believing that he had to deal with a cancerous mass, and sent for a lady physician to assist him in the management of the case.

The lady physician, after making an examination, thought the mass, which could be touched with the finger, was a fibrous tumor, and that it was about to make its escape from the uterus.

At the next menstrual period, it did escape, and when, at the Infirmary, Dr. Thomas made an examination, a mass about the size of a duck's egg was found resting against the ostium vaginae. By conjoined manipulation, a distinct indentation could be detected in the body lying in the pelvic cavity, and the middle finger could be pressed directly into the ring of what seemed to be an inverted uterus.

All who were present at the time the examination was made were satisfied that it was a case of inverted uterus. The physician who had had the patient under observation prior to the time at which Dr. Thomas saw her had arrived at the same diagnosis, after the mass had been driven into the vagina. The inversion had probably occurred in July. Dr. Byrne's instrument was then employed, the uterus yielded very readily, and in less than half an hour it was completely restored; the fundus being distinctly felt above the pubis. At the same time a mass was readily recognized by vaginal examination, and it was decided that a fibrous tumor was attached to the fundus uteri by a broad base; a base so broad that it was impossible for the uterus to give birth to the tumor without becoming inverted.

The tumor was grasped, dragged to the outside of the vulva, and then separated from the uterus by means of the serrated scoop. There was no hemorrhage, and the uterus was readily restored to its normal position by means of the finger. Ergot was administered, the uterus in the mean time being held in position with a sponge; and within a few minutes tonic contraction occurred, which kept the organ in place.

The uterine cavity was thoroughly syringed with thymolized water, and the patient made a rapid and complete recovery.

Dr. Thomas then referred to the 500 cases of inverted uterus which had been collected by Dr. Cross, of England. Of those, 450 were post-partum cases. Of the remaining 50 cases, 40 occurred as the result of fibrous tumors, dragging the uterus down.

Within the last six months, Dr. Thomas had reported two cases, in which inversion of the uterus had been produced by fibrous tumors.

DR. BACHE EMMET asked if it would not have been well to have first removed the fibrous tumor, before attempting to restore the uterus to its normal position.

DR. THOMAS replied that it was impossible to take that step, for it was impossible to make the diagnosis of fibrous tumor with absolute positiveness.

DR. LUSK referred to a case illustrating the difficulty which sometimes arises with reference to diagnosis. A number of gentlemen were present at the consultation. The majority decided that the mass which was in the vagina was a fibroid tumor, and recommended that it be removed by the ecraseur. Dr. Lusk, however, was able, by rectal examination, to pass his finger through the ring of what he believed to be an inverted uterus, but being in the minority the ecraseur was applied. But before constriction was made, he again expressed his conviction that the supposed fibrous tumor could be replaced. The chain was accordingly removed, and the uterus was readily re-inverted.

The following gentlemen were elected officers for the ensuing year:

President, ALEX. J. C. SKENE.

First Vice-President, JAMES B. HUNTER.

Second Vice-President, HENRY F. WALKER.

Recording Secretary, GEORGE T. HARRISON.

Corresponding Secretary, E. NOEGGERATH.

Treasurer, G. S. WINSTON.

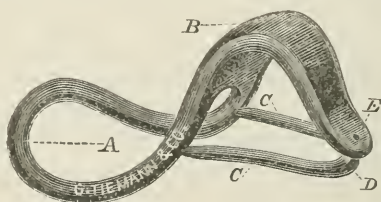
Pathologist, M. D. MANN.

Stated Meeting, Nov. 5, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

CYSTOCELE AND ANTEVERSION PESSARY.

DR. SKENE exhibited a pessary which he had devised for the treatment of simple prolapsus of the bladder and the urethra.



He had also found it useful in the treatment of anteversion and anteflexion of the uterus.

FIBROID POLYPUS SIMULATING INVERSION.

DR. W. T. LUSK presented a specimen which served to illustrate the difficulty that sometimes exists in making a differential diagnosis between an inverted uterus and a fibroid polypus.

When Dr. Lusk first saw the patient from whom the tumor was removed, he found a mass which completely filled the pelvic cavity. A consultation was held, at which Drs. Barker, Taylor, and Mundé were present. All arrived at the conclusion that the tumor was a polypus. Subsequently, Dr. Lusk placed the patient under the influence of chloroform and was able to detect a distinct indentation in the fundus of what had formerly been mapped out as the uterine body. He then thought he had to deal with an inverted uterus. The tumor was very elastic, and compression could be easily made to such an extent as to cause it to become flat.

A second consultation was called, at which Drs. Byrne, Barker, Hill, Mundé, and Taylor were present. All agreed that Dr. Lusk was mistaken with reference to his suspicion, and advised the application of the forceps and delivery of the tumor, as though it were the head of a child. The operation was performed, and when delivery had been effected it was very evident that the entire uterus had disappeared from above the pubis. A distinct ring could be recognized. It was determined, however, by the consultants, that the mass should be removed, whatever its character might be.

Dr. Mundé suggested that, if the tumor was in any event to be removed, an explorative incision should be made, for the purpose of determining its exact character. An incision was made, and it opened the very thick capsule of a fibroid, which was easily enucleated with the finger. The capsule was removed by means of the cecraseur. There was no constriction to indicate the line of separation between the tumor and the body of the uterus, and the consequence was, that a small portion of the inner surface of the uterus was removed. No unpleasant symptoms, however, followed the operation.

As soon as the tumor was removed, the uterus was readily restored to the normal position. No hemorrhage followed either the enucleation or the removal of the capsule.

OVIOTOMY—COLLOID CYST—LISTER'S METHOD—RECOVERY.

DR. LUSK reported a case in which oviotomy was performed under Lister's method. The patient's general condition was poor. The opening made in the abdomen was four and a half inches in length. The tumor was composed of a series of cysts filled with

colloid material. Lister's method was carried out to the fullest extent; and although the operation was performed on the surgical side of a tainted hospital, the patient recovered without a single disagreeable symptom. No after-treatment was necessary. The highest temperature reached was $101\frac{1}{4}^{\circ}$ F., and it subsided spontaneously within two hours. The case was reported for the purpose of urging upon the profession of this country the use of a measure which had been attended with such a degree of success in the hands of the celebrated ovariologists, Keith and Spencer Wells.

SUCCESSFUL OVARIOTOMY DURING PERITONITIS FOLLOWING TAPPING.

DR. GILLETTE reported a case in which he performed ovariectomy under Lister's method, and the temperature did not at any time rise above 102° F. The woman at the time of the operation had peritonitis, as the result of an explorative puncture made forty-eight hours previously. The tumor was of the colloid variety, and the external wound was not closed for a long time because of hemorrhage at various points. A drainage tube was introduced, and the discharge for forty-eight hours was so free that it became necessary to change the dressing twice a day, which was done under the carbolic spray.

Suspecting that there were clots in the cul-de-sac, the cavity was washed out and the sanious discharge soon ceased. The patient made a good recovery.

Dr. Gillette did not attribute the result especially to the use of Lister's method, for within the last nine months he had operated in two similar cases, and did not use either a drainage tube or Lister's method, yet the patients made good recoveries.

DR. GARRIGUES remarked that one objection to the use of carbolic acid was that it had been thought to produce death in a few cases by poisoning. For that reason a two-per-thousand solution of thymol might be substituted for the two-per-cent solution of carbolic acid, the thymol being entirely innocuous. He also referred to the recommendation of Hegar, that chlorine water should be employed as a disinfectant, because there was no liability of producing toxic effects by its use.

DR. LUSK said Dr. Keith stated to him that he had not seen any case in which the carbolic spray had produced any toxic influence, and that he had more confidence in it than in the thymol.

DR. WATTS remarked that the experience of Roosevelt Hospital was adverse to the use of thymol, and that a return had been made to carbolic acid.

DR. JANVRIK remarked that he had seen ten cases of ovariectomy in which the operation was performed under Lister's method, and that in none had the temperature risen above 102° F.

DR. M. D. MANN reported a

CASE OF SUDDEN DEATH IN CHILD BED FROM MITRAL STENOSIS
AND PULMONARY EDEMA.

A lady, æt. 25 years, was delivered of her first child two years previously. After a time, she again noticed that her abdomen was considerably enlarged. She positively refused the doctor an opportunity to make an examination, and accordingly she visited a well-known female physician who examined her and reported that the uterus was only three inches deep. At the end of another month the same physician made a second examination and gave a like report. At that time Dr. Mann insisted upon making an examination, and as soon as he placed his hand on the abdomen the motions of the child were detected.

Not long after, the lady had a sudden and severe attack of dyspnea, which was accompanied by cough and expectoration of mucus with considerable blood. A short time previous to the occurrence of the dyspnea, the chest was examined by Dr. Leaming, who determined that there were no signs of cardiac lesion present. When about 18 years old, the patient suffered from an attack of endocarditis, and a cardiac murmur persisted for some time after. The attack of dyspnea lasted about twenty minutes and was very severe. After its subsidence the heart was examined again by Dr. Leaming, and distinct evidence of valvular lesion was found, and the diagnosis of mitral stenosis was made. The pregnancy went on, and the patient improved somewhat under the use of digitalis. When labor came on, the first stage was tedious and extremely painful. There was apparently entire absence of liquor amnii, and yet the soft parts were quite yielding. The second stage of labor was short, the child being expelled after the occurrence of three or four pains. During labor, the patient suffered no inconvenience from her heart. The placenta was delivered within half an hour, the uterus contracted firmly, and the woman was in every way comfortable. About half an hour subsequently, she began to cough, expectorated a considerable quantity of watery mucus, finally blood, and the dyspnea became very urgent.

The chest was covered with mustard plasters, and the attack subsided at the end of about twenty minutes. She remained comfortable for about fourteen hours, the pulse being strong, though the temperature was a little elevated; at the end of this time she began to cough, dyspnea was developed, blood was expectorated, the patient was obliged to sit up in bed, the dyspnea became more urgent, and within fifteen minutes she was dead. Death occurred

about sixteen hours after delivery. Chloroform was not administered during labor because the friends would not permit its use. There was no autopsy.

DR. GILLETTE remarked that a prominent indication for the use of chloroform in the second stage of labor was the presence of a crippled heart. The popular idea that it was unwise and unjustifiable to administer chloroform to a parturient woman who was suffering from cardiac disease he regarded as incorrect, for in the second stage of labor the heart was called upon to do more work than normal because of the closure of the epiglottis and the fixation of the muscles of the thorax; hence the demand for chloroform to remove a condition which increased cardiac action. As an illustration, reference was made to a case in which a mitral murmur was present. The woman was the mother of five children. With the first labor no anesthetic was employed, and there was almost complete failure of heart-power. With the subsequent labors chloroform was given, and no trouble whatever was experienced relating to the heart.

DR. BYRNE asked Dr. Gillette if there was no form of cardiac disease which would deter him from administering chloroform during labor.

DR. GILLETTE replied that he could not conceive of any, for the object of the anesthetic was to remove the strain placed upon the cardiac circulation. If all voluntary efforts could be removed by the use of chloroform, extra amount of labor was removed from the heart, because the lungs did not become congested in consequence of closure of the epiglottis. A dilated and flabby heart, above all others, demanded the use of an anesthetic during labor.

DR. SKENE remarked that, in studying the cases reported by Dr. Angus McDonald, it had occurred to him that there was danger both from the chloroform and from the cardiac disease. But of the two, if the sedative influence of the chloroform could be obtained, so as to prevent excessive cardiac labor, the lesser of the evils had been admitted. He thought that could be accomplished only with chloroform, for the highly stimulating influence of ether was just the thing to be avoided.

PROLAPSE OF THE OVARIES.

- DR. SKENE introduced the above subject by saying that he did not refer to displacement of the ovaries caused by pressure from tumors, nor to cases in which the ovaries had been drawn out of place in consequence of pelvic inflammation, and he would also exclude that class of cases in which the possible or probable cause of enlargement of the ovaries could be readily diagnosticated.

The cases to which he referred were those in which there was displacement of the ovaries, one or both, without probable increase in their size.

With reference to symptoms attending prolapse of ovaries which were not markedly diseased, so far as he had been able to observe, there were none which were characteristic. He had noticed that pelvic pain was out of proportion to that expected from any form of displacement of the uterus. He had also observed that pain during and after defecation was a prominent symptom. Aside from these, he knew of no symptoms diagnostic of the difficulty.

With reference to physical signs he had found the prolapsed ovaries in different positions in the pelvic cavity, and was inclined to believe that the prolapsed organs were more tender than when healthy and in their normal position.

In the cases which he had had the opportunity to examine, he had not found that peculiar pain sometimes referred to—namely, such as is produced by pinching the testes. He believed, however, that, as a rule, it was not difficult to make a diagnosis by means of physical signs.

Dr. Skene further remarked that he had abandoned the method of bi-manual examination, and adopted the plan of catching the ovary between two fingers and the sacrum. He thought that in all uncomplicated cases, perhaps, the prolapsed ovaries were sufficiently low down in the pelvis to be caught in the manner indicated, and their shape and the degree of tenderness ascertained; whereas it was impossible, except in cases in which there was extreme relaxation of the abdominal walls, to crowd the hand down into the pelvic cavity to permit a thorough examination.

With reference to the etiology of the variety of prolapsus of the ovaries referred to, Dr. Skene had been led to believe that one cause was imperfect involution following parturition.

That, however, was not the only cause, for he had seen one case in which pregnancy had not existed.

He raised the question with reference to the cause in the class of cases referred to, because upon that point he was not entirely satisfied.

Another point upon which he desired information was concerning the effect produced upon the ovary itself by the prolapsus.

Granting that it was possible for a normal ovary to become displaced, was there in consequence a tendency to the development of disease in such an ovary? The question was suggested by the fact that, in the cases which had fallen under his observation, the displaced ovary had been more tender than normal. It might be said that with the displacement there would be obstruction to the return circulation which, in turn, would develop tenderness and also

degeneration, and he was inclined to believe that the hyperesthesia and the hyperemia were due to that fact.

With reference to treatment, the indication was to restore the prolapsed organs to their normal position and retain them there; but the question arose, Was anything gained by fulfilling this indication? If the supposition was correct that the ovaries became hyperesthetic and hyperemic because of the displacement, of course the reduction would be beneficial.

The plan of treatment which had given him the most satisfactory results was the following:

Place the patient in the knee-and-elbow position, lift the perineum and the pelvic organs as high as possible, and then allow the woman to remain in that position as long as possible. That should be repeated two or three times daily. Subsequently, he employed a tampon made of marine lint, which was easily introduced, so as to keep the pelvic organs well-supported. Following that, he had been able to use Peaslee's ring pessary with a certain degree of success in some cases, particularly those in which the vaginal wall was sufficiently relaxed to allow the ring to recede well back into the hollow of the sacrum. He had not, however, been as successful in the treatment of these cases as he desired.

DR. HARRISON thought the hyperesthetic and hyperemic condition of prolapsed ovaries was probably due to the displacement. He was sure that the prolapsed ovary was more tender than normal. With reference to treatment, he mentioned Dr. Emmet's modification of Hodge's pessary, with which very good results had been obtained. The modification consisted in bending one of the posterior limbs of the pessary, so that the support would be made from the broad ligament upon the side opposite to the prolapsed ovary.

DR. CLEVELAND referred to the broad bulb-pessary used by Dr. Thomas, and Dr. Harrison remarked that he had used the same instrument with very good success in some cases.

DR. SKENE remarked that he had employed the pessary recommended by Dr. Thomas, and his experience had been that, when it was sufficiently large to press fully against the sacrum, it was likely to interfere with defecation. The instrument answered very well for some cases of prolapsed ovaries, but not for all.

DR. WALKER remarked that when an ovary of the normal size was found prolapsed, it was almost always an accompaniment of a special lesion—namely, fissure of the cervix. The two conditions were so commonly associated that, when he found fissure of the cervix, he examined with the almost certain expectation of finding prolapse of one or both ovaries. In one case, after using a variety of instruments, he finally obtained a good result by the use of Dr. Noeggerath's pessary.

DR. MANN remarked that the prolapse was not primary, and the

congestion secondary in all cases. For, in a case which came under his observation, there was a periodical congestion of the ovaries about five days after menstruation, prolapsus occurred, and with the disappearance of the congestion, the ovaries returned to their normal position. He had seen cases in which there was prolapse and enlargement of both ovaries, and yet they were not in the slightest degree tender.

DR. MUNDE said his experience led him to agree with Dr. Mann. Although it was reasonable that a displaced ovary should become congested, yet he did not believe that the displacement was always primary, and the congestion secondary; for in the majority of cases, when the uterus is not displaced, it is the repeated congestion and gradual enlargement of the ovary which produces its displacement. In cases in which he had found the normal ovary prolapsed, the organ had not usually been very sensitive.

Stated Meeting, Nov. 19, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

OVARIAN TUMOR DEVELOPED INTO THE BROAD LIGAMENT.

DR. NOEGGERATH presented an ovarian tumor which had developed into the left broad ligament of a woman, fifty-one years of age.

He first saw the patient in January, 1878. On inquiry at that time, it was found that the disease began about ten years previously. Up to six years ago, she had suffered from profuse uterine hemorrhage, and occasional attacks of pain accompanied by fever. The latter were sufficiently severe to keep her in bed for weeks in succession. It was also learned, at that time, that the last two physicians who had examined her had reached the conclusion that she was suffering from fibro-cystic tumor of the uterus, such as rendered operation impossible. On examination, Dr. Noeggerath was inclined to confirm the diagnosis, because of the history of the case, and the fact that the uterine sound could be introduced to the depth of four inches.

The cyst was tapped, and about twenty-one pounds of tenacious liquid withdrawn, which contained a large quantity of paralbumen. Further, it did not contain the substance claimed to be present in the fluid from fibro-cystic tumors of the uterus—namely, the fibrino-genetic substance. On microscopical examination, the fluid was found to contain abundance of ovarian corpuscles. A specimen of the liquid was sent to Dr. Drysdale, of Philadelphia, who reported that the corpuscles characteristic of ovarian tumors were present in large numbers. The patient was tapped twice.

On the 2d of November, Dr. Noeggerath removed the tumor.

In taking it out, the uterus followed, and was seen to be in a normal condition. The tumor was attached to the left broad ligament, but there was no pedicle, properly speaking. As much of the tumor was removed as was possible, and the remainder was treated in the following manner: Being convinced of the innocuousness of a large pedicle in the abdominal cavity when ovariectomy was performed under the antiseptic method in its fullest details, what remained of the tumor was tied in four sections, and allowed to drop into the abdomen. About one-fifth of the tumor remained, and the cut surface was about seven inches in length. The operation was performed and the dressings made under Lister's method, and the result was that the temperature at no time had been above $99\frac{1}{2}^{\circ}$ F. Not an unpleasant symptom was developed, and the patient made a good recovery.

DR. MUNDE asked if there was not danger of proliferation from the portion of the tumor returned to the abdomen?

DR. NOEGGERATH replied that it was not the amount of pedicle left, but the character of the tumor that decided the question. In October, 1877, he had removed a cyst from the abdomen, and there was left only a very small pedicle. In June, 1878, the patient returned with a tumor which had developed in the peritoneal portion of the wound. An attempt was made to remove it, but adhesions to the intestines rendered its removal impossible. The wound was closed, and the patient recovered from the effects of the operation. About five weeks subsequently, the patient died with symptoms of pleuritis and general exhaustion. At the post-mortem examination there was found general carcinosis of the peritoneum and also of the pleura.

If careful examination were made of ovarian cysts which had been removed, it would be found that the pedicles of a certain number were the seat of secondary growths, not larger than the head of a small pin. If careful microscopical examination were made in these cases, a peculiar multinucleated cell, described by Dr. Thornton, would be found to exist, both upon the surface and in the substance of the tumor. In such cases, if the tumor was removed through a small wound in the abdominal walls, so that the cells were rubbed off and dropped into the abdominal cavity, they might be the seed which would produce a new growth of the same character with the original tumor. What the cells were, and why they should develop secondary growths, was not known. This class of tumors usually contained sarcomatous elements.

DR. JACOB remarked that direct admission of small particles into the lymphatic system, through the large stomata of the peritoneum and the pleura, was not only possible, but very probable. In that way, general carcinosis might be developed, as in Dr. Noeggerath's case, independent of secondary growths from the cells, which had been removed from a tumor at the time of an operation.

DR. NOEGGERATH remarked that the principle which he wished to establish with reference to diagnosis was, that positive diagnosis should not be made, certainly no operation for removal of the tumor be performed, before the cyst had been emptied, in doubtful cases. He thought the tendency to operate, and avoid paracentesis, was all wrong. His impression was, that emptying the sac could be made just as innocuous as the opening of an abscess in any part of the body.

To illustrate the value of tapping, and examination of the fluid withdrawn from abdominal cysts, Dr. Noeggerath related the history of a case which came under his observation at Mt. Sinai Hospital. The patient had been sent to the hospital with the diagnosis of ovarian tumor. A careful examination, by percussion and palpation, revealed what was supposed to be a tumor, which occupied the right hypochondriac region, and extended towards the left side. A second examination gave all the evidences of ascites, and there was no longer any tumor upon the right side of the abdomen. A hypodermic syringe was introduced, and liquid removed which was as clear as distilled water, and contained the slightest trace of albumen. The cyst was evacuated twice. The liquid was so characteristic that Dr. Noeggerath felt certain he had to deal with a cyst of the broad ligament, and, in accordance with that diagnosis, proceeded to operate for its removal. The operation proved the diagnosis to be correct, and the patient made a good recovery.

DR. CHAMBERLAIN asked Dr. Noeggerath if he considered it sufficient, in order to obviate the dangers of tapping, to simply perform the operation under the carbolic spray?

DR. NOEGGERATH answered in the negative, and further stated that the fullest antiseptic precautions must be employed. Under that head he included washing out the cyst with an antiseptic fluid before removing the trocar, in case there was the least possibility that the contents would prove nefarious should they pass into the abdominal cavity.

DR. HANKS remarked, with reference to diagnosis, that it had been supposed a cyst of the broad ligament would not readily become refilled after the fluid had once been evacuated.

DR. NOEGGERATH remarked that that was one of the facts which made him hesitate with reference to his diagnosis, because the cyst had been evacuated twice, and had again become filled with fluid.

DR. SKENE asked if it was the rule to find the peculiar cell referred to, upon the outside of the cyst?

DR. NOEGGERATH replied that it was found both upon the inside and the outside of the sac, and one reason for alluding to that fact was that it explained many conditions which hitherto had been doubtful. The cells were usually of an ovoid shape, and had a large number of shining points, which presented very much the appearance of fat-globules; besides there was a very large nucleus. He supposed it was the same cell which had been described by Thornton.

DR. SKENE remarked that he asked the question because Dr.

Keith had stated distinctly that, with ovarian cysts of that character, hydroperitoneum was likely to be present. Therefore, by removing a portion of that fluid, and making an examination, the character of the cyst could be diagnosticated before an operation for its removal. Dr. Keith had also stated that, in the majority of cases in which there was fluid in the peritoneal cavity, as well as in the cyst, he was able to make a correct diagnosis, and did not operate upon such cases.

Dr. Skene believed that the question of diagnosis by the presence of a peculiar cell originated entirely with Dr. Keith, and not with Dr. Thornton.

He also asked Dr. Noeggerath if he considered the presence of an abdominal drainage tube a pretty sure guarantee that sepsis would be developed?

DR. NOEGGERATH said, "Certainly not," but he thought chances of the development of sepsis were very much diminished by the complete exclusion of air. His impression was that, without using the drainage tube, sepsis could be prevented by adopting full antiseptic precautions.

Dr. Noeggerath referred to a case in which death occurred from septic peritonitis, produced by secretions from the pedicle running down along outside the drainage tube into the peritoneal cavity. Such an accident was rare, but he had lost one patient in consequence of its occurrence, although the drainage tube was carefully cleansed.

OPERATIVE TREATMENT OF PELVIC ABSCESS.

DR. CHAMBERLAIN raised the following question: What indications warrant interference with a pelvic abscess which has discharged continuously for a long period of time? In a case which he had under observation, the uterus was strongly reclined into the left anterior position, and its posterior wall seemed to be the seat of a very hard tumor. About eight months ago, pus began to discharge freely into the rectum, through an opening so high up that it could not be reached by the finger. The discharge was not profuse, but was continuous. No fluctuation could be detected in the hard mass behind the uterus. The patient, being in danger because of the chronic suppuration, the question was raised with reference to treatment.

DR. NOEGGERATH remarked that he had seen five cases of pelvic abscess which opened into the rectum. The only sure method of cure for these cases was, to pass the finger or some instrument devised for that purpose through the opening in the rectum, which was usually above the third sphincter. Then, with a finger in the vagina, the point of least resistance could be distinctly detected. Carefully noting that point, an opening should be made through the vaginal walls by means of the heated knife. On account of the enormous thickening of the tissues, it was sometimes a very tedious

operation to reach the abscess. After the opening had been made, a drainage tube should be inserted. In one of his cases, the finger passed far to the right of the uterus, after it had been introduced through the opening in the rectum. That being a dangerous region in which to make an incision, because of the liability to wound important blood-vessels, he cut directly behind the uterus. Before resorting to the cutting operation, an attempt was made to cure the case by the insertion of drainage tubes into the cavity of the abscess through the opening in the rectum. The discharge diminished somewhat, but radical cure could not be effected in that manner. The reason why such abscesses which emptied into the rectum never healed of themselves was simply because the opening in the rectum was always above the lowest part of the abscess. He had treated three cases, by making an opening through the vagina, and all the patients had recovered. One case had fallen under his observation in which the discharge through the rectum from the cavity behind was not entirely purulent, but only sero-purulent. In that case, cure was effected through repeated evacuations made by the aspirator. The aspiration was made through the vaginal walls. Such was an exceptional case, however, the rule being that a cure was not obtained except by an incision and the introduction of a drainage tube.

DR. MANN suggested the introduction of the entire hand into the rectum, for the purpose of finding the fistulous opening.

DR. CHAMBERLAIN remarked that he regarded such an operation as dangerous, and had hesitated to resort to it because he believed conditions would be encountered which would render peritoneal rupture very probable.

DR. SKENE remarked that he had not had any difficulty in finding the opening into the rectum in such cases, by dilating the sphincter, distending the rectum by means of two Sims' specula, illuminating the cavity with a mirror, and then fishing for the opening with a hook. He was satisfied of the truth of the statement, that abscess in the pelvis failed to heal because the point of exit for the pus was above the lowest point of suppuration. As soon as the abscess could be opened at its most pendant position, there was no reason why complete cure should not ensue.

Stated Meeting, Dec. 3, 1878.

DR. JAMES B. HUNTER, *Vice-President, in the Chair.*

CONGENITAL UMBILICAL HERNIA—SPINA BIFIDA.

DR. A. JACOBI presented a specimen in which a congenital umbilical hernia and spina bifida existed. All the viscera of the abdominal cavity were in the hernial sac. There was no external genital apparatus. There was, however, a well formed *anus*, but it ended in a pouch a short distance above, and illustrated the manner in which the intestinal tube was originally formed, viz.,

in separate pieces. It was a simple opening without anything like a sphincter.

There was also a spina bifida of large size, extending from the upper portion of the sacrum upwards to the tenth dorsal vertebra.

Dr. Jacobi advanced a theory with reference to the formation of congenital fissures of that kind, namely, that in some cases, perhaps, it was the result of slight development of amniotic liquid and consequent difficulty with which the amnion was lifted from the surface of the body. In this case, abnormal adhesions between the placenta and the surface of the body about the patent fissures were to be considered the causes of the anomalies.

FIBRO-MYOMA OF THE OVARY.

DR. T. G. THOMAS presented an almost solid tumor which had been removed from the abdomen of a woman about forty years of age. The tumor had been growing for considerably more than a year. With its growth the general health of the patient became depreciated, and marked abdominal dropsy was developed. The tumor could be distinctly felt rolling about in the fluid, and when the fluid was drawn off, the tumor was apparently entirely solid. Dr. Thomas thought it was a fibroid tumor of the uterus with a long pedicle. He excluded solid ovarian tumor, because such tumors were so exceedingly rare.

The patient was operated upon at the Woman's Hospital. Quite a large abdominal incision was made, and to his great surprise, when the tumor was reached, it was found to be almost completely solid and attached to the left ovary. There was a cyst about the size of an egg in the tumor, and it contained a slightly gelatinous fluid.

Careful examination revealed the fact that the tumor had no attachment whatever except with the ovary. There were no fibres running from the uterus, as had been claimed by some to be invariably present in cases of solid tumors of the ovary.

The tumor had been submitted to Dr. Francis Delafield for microscopical examination, who reported it to be a fibro-myoma. The patient made a good recovery, and without the development of a single bad symptom.

Dr. Thomas remarked that the symptoms in this case were almost identical with those present in another in which the tumor was attached to the uterus by a long pedicle that permitted it to roll about in the abdominal cavity. He thought it impossible to decide, with reference to the attachment of such tumors whether it was ovarian or uterine. Even if the fluid had all been drawn from the

abdominal cavity, he believed he would not have been able to trace the pedicle.

In answer to a question, he stated that the fluid in the abdominal cavity was probably produced by the irritation caused by the movable tumor.

[At a subsequent meeting Dr. Thomas reported the rapid complete recovery of the patient.]

TWO CASES OF PRESUMPTIVE TUBAL PREGNANCY, RUPTURE OF SAC,
RECOVERY IN ONE CASE.

DR. THOMAS reported two cases which were similar in some respects and dissimilar in others. Both had occurred in his practice within two weeks, and in neither was he positive with reference to diagnosis.

The first patient was a lady who was the mother of three children. She supposed herself to be advanced about two and a half months in pregnancy, because all the symptoms from which she had suffered in her former pregnancies were present except the decided nausea. She was under the care of Dr. Walker. One curious symptom was present, namely, when she made any degree of exertion, it was followed by a sudden gush of blood from the vagina, sometimes in clots. About twenty days before Dr. Thomas saw her she was taken with symptoms of miscarriage. There was considerable pain and apparently violent uterine contractions which were chiefly in one iliac fossa. So localized were the contractions that the patient was able with her finger to make a circle which indicated their exact situation. At that time she cast off something which presented the appearance of a membranous mass, and her mother was so certain that it contained the contents of the uterus that she did not exhibit it to Dr. Walker, but threw it away. As described it was thought to be a deciduous membrane. The pain continued. It was taken for granted that a miscarriage had occurred, and that the continued pain was due to some condition as yet unrecognized. On careful examination under an anesthetic, Dr. Walker discovered what he thought was a retroflexed uterus. An effort was made to replace it, but it failed. The patient went from bad to worse. She was again placed under the influence of an anesthetic, and a second attempt was made to replace the uterus, and, at the time, it was thought the effort had been successful. About ten days after, Dr. Walker was summoned in great haste because of the sudden development of very serious symptoms. The patient was found suffering the most intense abdominal pain, her pulse was thready, and her face was anxious and covered with cold perspiration. Hypodermic injections of morphia were freely administered, and, a few hours

later, Dr. Thomas saw the patient in consultation. On his arrival, it was found that she had rallied somewhat, but it seemed evident that a fatal termination was near at hand. The patient remarked several times that she felt as though something had broken within her. The doctor passed his finger into the vagina, and found that the uterus was pressed completely forward and occupied the position ordinarily occupied by the uterus in cases of pelvic hemothecoele. The tenderness of the abdomen was intense. It was evident that a hemothecoele existed which filled the entire posterior portion of the pelvis and extended upward to within a hand's breadth of the umbilicus. The day before there was simply a small tumor in the pelvic cavity which was taken for the fundus of the uterus. To a certain extent the case was clear, and Dr. Thomas thought the lady had a tubal pregnancy, that the tube had ruptured, and what Dr. Barnes had called a cataclysmic hemothecoele had formed and filled the abdominal cavity to the extent described.

The case, however, did not terminate fatally. On the following day the temperature was $99\frac{1}{2}^{\circ}$ F., the pulse 110, and since that time the patient had been doing perfectly well. There were no signs of septic poisoning, and it was believed that absorption of the hemothecoele was taking place. If a fetal mass was present, it would probably in time be expelled by the efforts of Nature.

The second patient was a healthy German lady, *æt.* 33 years, and the mother of two children. Three months ago she began to develop the ordinary signs of pregnancy.

In addition, she also had occasional gushes of blood from the uterus. Two weeks ago, while feeling perfectly well, no blood escaping from the vagina, she got up from the sofa and went to the front door. As she pulled upon the door handle, a mass which she supposed was a mass of membrane suddenly escaped from the vagina. She immediately lay down, but considerable hemorrhage occurred. About ten days after, she was suddenly seized with the most agonizing pain, which was confined to one iliac fossa. The patient fell into an almost fatal collapse. On the following day, symptoms of peritonitis were developed, and on the next day, Dr. Thomas saw the patient in consultation. It was evident that severe peritonitis was present, and it seemed to be limited to the pelvic cavity. He was strongly inclined to believe that rupture of a Fallopian tube had occurred. The peritonitis soon became general, and the patient died at the end of thirty-six hours. No post-mortem could be obtained.

DR. WATTS asked if, in the first case, it was supposed that the tumor first felt in the pelvic cavity was the fetus which had fallen down into the cul-de-sac?

DR. THOMAS replied that he thought it was the tube of that side which had sagged.

DR. JACOBI asked if it might not have been a peritoneal exudation?

DR. THOMAS thought there was a possibility that it was.

DR. JACOBI remarked that possibly the case was one of hemorrhagic peritonitis. For the pain was in the region where such a peritonitis was liable to occur, and the hemorrhage which occurred from blood-vessels in layers of recently formed false membrane was sometimes very great.

DR. THOMAS remarked that in neither case should he have drawn the conclusion he did with reference to Fallopian pregnancy, except for the presence of the usual symptoms of pregnancy.

DR. JACOBI remarked that he was just as ready to regard the case as one of miscarriage, as one of hemorrhagic peritonitis.

DR. MANN referred to a case reported by Dr. Skene, in which the history was almost identical with that given in Dr. Thomas' second case. In that instance the specimen revealed probable extrauterine pregnancy.

DR. THOMAS further referred to two cases of extrauterine pregnancy, in which the patients were suddenly seized with symptoms almost exactly like those developed in the cases just reported. The first was one which he saw in consultation with Dr. Giberson, of Brooklyn, who had reported it in full in the Transactions of the Kings County Medical Society. Pelvic peritonitis, but not hemothecoele, was diagnosticated before death.

The second was a case in which the patient died within fifty-six hours after sudden onset of the symptoms. The agony was so intense that it was only with the greatest difficulty that an examination could be made during life, and he was unable to positively determine whether or not a hemothecoele existed. At post-mortem one Fallopian tube was found ruptured, but the fetal sac curiously enough remained intact. The pelvic cavity contained a large quantity of blood which had escaped from a ruptured artery in the muscular covering of the tube.

From the history of these cases he was strongly inclined to the opinion that extrauterine pregnancy existed in the cases first reported.

DR. JACOBI asked if Dr. Thomas had ever met with a case in which he was quite sure that extrauterine pregnancy existed, and the patient had recovered after the development of such symptoms as had been enumerated?

DR. THOMAS replied that he had never seen a case of hemothecoele which terminated with expulsion of a fetal mass.

DR. JACOBI remarked that it was improbable that rupture of the Fallopian tube should take place, and a large quantity of blood

escape into the abdominal cavity, and the patient recover. When the patient did get well it was probable, from what we knew, that it was not a case of tubal pregnancy. He regarded it as important to be aware of that fact because, it being known that no cases had recovered when left to themselves, there would be no harm in opening the abdomen and searching for the bleeding vessel. Such an operation had been proposed by Dr. Stephen Rogers, and certainly it would be justifiable in the present condition of our knowledge with reference to these cases.

DR. THOMAS remarked that in cases in which he could be positive in his diagnosis, he regarded the operation proposed by Dr. Rogers not only justifiable, but that it was the stern duty of the practitioner to perform it. In one case he made all preparation for its performance, but the patient died before the operation could be commenced.

While in certain cases he would have been willing to have taken all the risks of an operation for securing the bleeding vessel, yet he was not willing from a mere scientific standpoint to maintain a diagnosis. He believed the subject of hematocele and extrauterine pregnancy needed a complete revision. He thought the literature of the subject was not reliable; that a great deal was yet to come forth which was of the utmost value, and which would differ entirely from the olden-time views upon the subject. In cases in which the diagnosis could be made certain, that the symptoms such as described were produced by rupture of a blood-vessel in connection with extrauterine pregnancy, he would not hesitate to resort to an operation for the arrest of the hemorrhage. He thought it improbable that the operation would become very common, because some one would be ready to raise an objection.

PREMATURE OSSIFICATION OF THE CRANIUM—MICROCEPHALIC CHILD.

DR. JACOBI reported a case of premature ossification of the cranium. At the time he saw the child it was about ten months old. The mother stated that she had a difficult labor, and that the child was delivered by forceps. At the time of birth there was a sore upon the occiput. Three months after birth a piece of bone was removed from the spot where the sore existed. There was evidently a necrotic process which dated from the birth of the child and delivery by forceps. All the sutures and fontanelles were closed, and the mother stated that they were in that condition at the time of birth. The head measured about 14 inches in circumference, while a normal head at that age should measure about 18 inches. The lateral portions of the frontal part of the head were flattened, and there was a considerable ridge in the median line. The question arose, Why did the original frontal suture exhibit such a prominence? There were two possibilities in the case. *First*, the coronal cranial suture may have ossified prematurely and resulted in narrowing the anterior

portion of the skull. Consequent upon that, a portion of the brain was pushed backward, a portion anteriorly, and the result had been a bulging out which was finally covered by the ossifying frontal suture. This is the most probable explanation.

Second. The ridge might be due to a local inflammatory process; a pachymeningitis and a periostitis which at that early period of fetal development was to be taken as identical.

It might seem that a head of such size should not give rise to much difficulty during the process of parturition, but it was to be remembered that the bones could not yield to the pressure given as the head passed through the pelvic cavity. It was easy to understand how such a general resistance might result in injury and necrosis.

DR. BLAKE remarked that a point upon which he wished to obtain suggestions in these cases was, when it could be clearly determined during labor that the child's head was in the condition described and was entirely unable to mould itself to the pelvic cavity, whether the operation of craniotomy would not be more readily entertained, in view of the subsequent mental and physical condition of the child?

Stated Meeting, December 15, 1878.

DR. A. J. C. SKENE, *President, in the Chair.*

UTERINE FIBROID—LAPAROTOMY—PECULIAR DISTRIBUTION OF BLOOD-
VESSELS.

DR. T. G. THOMAS presented a uterine fibroid which he had removed by laparotomy from a patient about forty years, the mother of four children.

Some three or four years ago the ordinary symptoms of uterine fibroid began to be developed, such as menorrhagia, descent of the uterus, dragging pains about the pelvis, backache, and leucorrhea. Gradually the uterus descended until it was in the condition of the third stage of prolapsus. Diagnosis of uterine fibroid was made; the tumor apparently grew from the fundus of the uterus. She was placed upon the ordinary treatment, but without effect. The tumor gradually increased in size. About eighteen months ago, abdominal dropsy began to develop, and the case became a very grave one. She was temporarily relieved by tapping. Paracentesis was performed several times, and each time after the removal of the fluid the tumor could be detected rolling about in the abdominal cavity. The general condition of the patient became very low, and in that state she consulted Dr. Cutter, who placed her upon his peculiar diet, which consisted chiefly of

abstaining from all starchy and fatty food. The patient declared that from the time she began such diet her general condition began to improve, that her digestion was better, and that the tympanites was less. She improved to such an extent that she was able to be about the house and attend to her ordinary duties.

Dr. Thomas saw her first about two weeks prior to the operation. At that time she was exceedingly weak. Her pulse was uniformly a little over 100, and the temperature was elevated, but not over 100° F. Her digestion was very feeble, and she was exceedingly emaciated.

The case was regarded as one which was necessarily hopeless unless laparotomy was performed. It seemed that the solid tumor rolling about in the abdominal cavity gave rise to continued ascites.

The patient was very desirous that the operation should be performed, which was accordingly done in the usual manner.

When the tumor was reached through an incision in the median line, the following most remarkable appearance was presented. From the fundus of the tumor eight or ten vessels, as large as the brachial artery, extended to the distance of four or five inches, and were attached to the large intestine. The vessels were entirely free except at their attachments to the top of the tumor and to the large intestine, and looked like so many cords stretched across the space.

Dr. Thomas thought it probable that the vessels were formed upon the surface of a false membrane, which had disappeared and left them remaining. They were ligated close to the intestine, also close to the tumor, and then removed. Then came the attachment which the tumor had to the uterus. The two bodies seemed continuous, and it was the doctor's first impression that it would be necessary to remove the entire uterus.

No constriction between the uterus and the tumor existed, but by carefully crowding the fingers into the substance of the mass the line of attachment between the two could be detected. The pedicle was secured in two parts by means of a hempen ligature, and fastened in the lips of the abdominal wound. The hemorrhage was readily controlled. The operation was performed under the carbolic spray.

Dr. Thomas further remarked that he was not at all in favor of removing such tumors on account of their existence, and had the patient not suffered from repeated attacks of abdominal dropsy, he should not have performed the operation. Two hours after the operation it was found that hemorrhage was taking place from the pedicle, one of the ligatures not having been drawn sufficiently tight.

Another ligature was placed about the entire pedicle, and the hemorrhage was readily controlled. The patient, four hours after the operation, was feeling very comfortable. Her mind was clear and she was cheerful. Her pulse was 114 and her temperature $101\frac{3}{5}^{\circ}$ F.

DR. SKENE asked if the relation of the omentum to the tumor was noticed?

DR. THOMAS replied that the omentum and the tumor had no connection whatever.

DR. SKENE remarked that he asked the question because of a similar appearance of blood-vessels which he had seen at a post-mortem examination. The patient had been suffering from abdominal cellulitis. An abscess had formed and emptied itself into the upper portion of the rectum. On opening the abdominal cavity, it was found that the lower portion of the omentum was lost in the inflammatory products, and in its place there was a network of large vessels. It occurred to him that it was possible the omentum in Dr. Thomas' case had been attached to the tumor; that it had finally disappeared and left the vessels remaining, thus explaining the peculiar appearance found at the operation.

DR. THOMAS remarked that such might be the true explanation, but none of the gentlemen who were present at the operation were impressed with the idea that there was any connection between the omentum and the tumor.

DR. BLAKE read a paper on

DYSTOCIA DUE TO PREMATURE OSSIFICATION OF THE FETAL CRANIUM.¹

DR. THOMAS remarked that he had met two cases of premature ossification of the fetal head, and in both the condition was diagnosed before delivery. One case he saw in consultation with the late Dr. Wilson, of this city. Dr. Wilson had applied the forceps twice, but failed to deliver the child. Dr. Thomas also applied the forceps and failed to accomplish delivery.

The patient being under the influence of an anesthetic, the whole hand was introduced into the vagina, when it was discovered that the fontanelles were exceedingly obscure, and the conclusion was reached that premature ossification of the fetal cranium had taken place.

The head was perforated, and after delivery it was determined positively that premature ossification existed.

He thought that in cases in which failure attended ordinary skill and strength in the use of the forceps, it was proper to introduce the entire hand into the vagina, for by sweeping the hand around the head pretty accurate conclusions, in a great many cases at least, could be reached with reference to the existence of this peculiar condition.

The second case he saw in consultation with the late Dr. The-

¹ See ORIGINAL COMMUNICATIONS in this number.

band. The forceps were applied several times, but it was found impossible to deliver the child. The suggestion was made that premature ossification of the fetal head had taken place. The whole hand was introduced, the condition recognized, and the child was at once delivered by perforation.

Dr. Thomas further remarked that he had seen one case in which death followed this condition. The child lived several months and died with obscure brain symptoms believed to be due to compression.

Dr. MANN asked, whether, in the cases reported, observation had been with reference to the length of utero-gestation; that is, whether it had continued longer than nine months.

Dr. REYNOLDS remarked that, in the second case reported by Dr. Thomas, either miscalculation had been made, or else utero-gestation extended to the close of the *tenth* month. He further remarked that the woman had previously borne two well-developed children without difficulty.

Dr. REYNOLDS referred to a case which he saw in the Nursery and Child's Hospital. The woman had been in labor for many hours and an attempt had already been made to deliver by forceps when he saw her. He did not suspect the condition which was afterwards found. He perforated the head, broke up the brain, and then applied the forceps, but found it impossible to diminish the size of the skull. He was obliged to break the skull with proper instruments before delivery could be effected, and it was not until the child was delivered that the real condition of the cranium was recognized.

Dr. SKENE thought that perhaps the difficulty in diagnosis existed largely in the fact that we did not look for this condition of the skull. It occurred to him that the cases which had been reported should be divided into two classes.

1. A class in which the fetal head was not unusually large, but simply unduly ossified, and

2. A class in which the general size of the child was sufficient to render delivery impossible in the natural way.

With reference to treatment, it would be the same for both classes of cases, except, perhaps, there would be less hesitation in perforating the small ossified head than the ossified head of a large child.

Dr. JACOB asked, with reference to the cases reported, whether they were the first or later children. It appeared to be a fact that premature ossification of the sutures and the fontanelles occurred particularly with the first child. It appeared to be a fact also that in the milk of such young mothers phosphates were predominant, as compared with the milk of mothers later in life.

He had noticed in a number of cases that the first labor was most severe, and perhaps it would be well to consider that fact in order to verify or refute his observations.

The practical point in cases of premature ossification of the skull, whether complete or partial, was, especially if the mother was young, to forbid her nursing her child.

DR. SKENE remarked that, according to his observations, labor in vigorous and healthy women frequently was tedious and difficult, whereas frail, fragile women very frequently had easy labors. He had accounted for that difference partly by the difference in degree of ossification of the child.

DR. RODENSTEIN reported a case of

POLYCYSTIC TUMOR OF THE OVARY—WEIGHT, 146 LBS.¹

DR. THOMAS thought it very improbable that the tumor was ovarian, for it was exceedingly rare that an ovarian tumor lasted *eighteen* years. The average duration of ovarian tumors was only about three years. The ovarian tumors which had a duration of six, eight, or ten years were very generally monocystic and not polycystic. He thought it altogether probable that the tumor originated in the uterus, although that organ was found atrophied and in the pelvic cavity. Tumors of that size and duration were almost invariably uterine fibro-cysts. He referred to a tumor which was removed by Dr. Little of New York. It had been diagnosed as ovarian tumor. When removed it weighed forty pounds and was found to be a uterine fibro-cyst which was attached to the posterior part of the neck of the uterus by a pedicle not larger than two fingers.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Reported by W. H. H. GITHENS, M.D., Secretary.

Stated Meeting, September 5, 1878.

Vice-President, RICHARD A. CLEEMANN, M.D., in the Chair.

NEW CLAMP SUTURE.

DR. ALBERT H. SMITH described a suture which he had employed successfully in closing lacerations of the perineum, and which is a modification of one proposed by H. L. Thomas, M.D., of Richmond, Va., in the *American Journal of Medical Sciences* for October, 1877. A needle, armed with a soft wire, is passed through the tissues in a straight line, and without emerging is carried around to the point of exit on the opposite side of the wound. A straight steel canula of proper length is now slipped down along each end of the wire, until the inner ends approximate. The ends of the wire are now drawn together and twisted, and the entire surface is held in close apposition.

¹ See this number.

DR. SMITH exhibited

A SELF-RETAINING VULVAR RETRACTOR,

having two very short blades. The mechanism governing the expansion of the points of the blades is independent of that of the outlet. The uterus may be brought to the vulva for inspection or operation.

Dr. Smith also exhibited a new

INSTRUMENT FOR FRESHENING LARGE SURFACES,

as in the operation for the restoration of a ruptured perineum. It is a double-edged lance-headed tenotome. This instrument enables the operator to denude a large surface, taking off a uniform flap of any required thickness, without annoyance from hemorrhagic oozing.¹

DR. WM. GOODELL had had good results from the interrupted wire suture, and did not feel the need of making a change. If future failures to obtain satisfactory union should make him desire a different support for broad, freshened surfaces, he would try the method described by Dr. Smith. He made two objections to the use of the cannulas. One, that if one pair of them were used for the first, deep stitch, it would be necessary to employ others for the remaining deep stitches; and again, the tubes are larger than any wire ever used as a suture, and they would cause sinuses or fistulae that might necessitate a second operation.

DR. SMITH replied that the inner ends of the cannulas not being allowed to penetrate, but being completely buried in the tissues, no fistula could result if they were removed early, say about the third day.

DR. CHAS. H. THOMAS had in use a set of three specula designed by Dr. Higbee, of Springfield, Mass. They have short blades, small vulvar, with great vaginal expansion, but the three instruments are required to fulfil the demands of all cases.

DR. JOHN FORSYTH MEIGS read a paper on

ATELECTASIS PULMONUM.²

DR. WM. SAVERY described a case of atelectasis in a child eight days old. It was caused by a cold bath. The symptoms were cyanosis, a weak pulse, and muscular spasm. Death occurred twelve hours after the attack.

DR. J. B. WALKER had seen in his hospital practice a case of measles, in which the eruption, which was slight, retroceded the second day. A hot bath, which was given to bring it out again, was quickly followed by collapse of the lung and death. The infant had had a slight bronchial catarrh before the attack of measles.

¹ See paper by Dr. Jenks in this number, p. 264.

² See ORIGINAL COMMUNICATIONS in January number.

DR. MEIGS feared that the great lessons of his paper had not been understood. He would again draw the attention of the Society to the interesting points of the case. In the first place, the remarkable resemblance to opium poisoning, which deceived two experienced physicians, and, in the second place, the cause, which was prolonged crying. The long-continued violent use of the respiratory muscles had fatigued them and caused spasm of some and complete paralysis of others, the lung collapsing from its own elasticity.

DR. A. H. SMITH had seen cases of atelectasis resulting from shock, but had never been led to the solution of the *modus operandi* as suggested by Dr. Meigs.

Stated Meeting, October 3, 1878.

The President, JOHN H. PACKARD, M.D., in the Chair.

MULTIPLE FIBROID TUMORS OF THE UTERUS.

DR. WM. GOODELL related the history of a case of multiple fibroid tumors of the womb. One year after the removal of a sessile fibroid tumor, for which the lady first consulted Dr. Goodell, the uterus remained large and liable to hemorrhages, and upon examination he discovered another sessile growth which he removed, and a third one which was not removable. This case was a representative of a class which are loosely termed recurrent fibroid, but, in the opinion of Dr. Goodell, this term should be given only to uterine sarcoma which is truly recurrent, while the cases of which the present one is a type, are characterized by the presence of a number of minute tumors which develop seriatim, and so give rise to the incorrect diagnosis of recurrent fibroid.

In support of his position, Dr. Goodell exhibited an inverted uterus studded over on its mucous surface with a large number of small fibroid growths, pediculated and sessile. The history of this specimen was given as follows:

A patient had applied to the late Dr. W. L. Atlee for relief from a uterine tumor accompanied by hemorrhage. A fibroid tumor was drawn down and removed by means of the *ecraseur*. The patient returned some time afterwards, bleeding as badly as ever, and the doctor on examination found, what he considered another tumor, extruding from the mouth of the uterus. With difficulty he removed this tumor by means of the *ecraseur*, and then found it to be the inverted uterus. The patient recovered.

Dr. Goodell also exhibited a hen's egg of large size, which had, on opening, been found to contain within it another perfect egg with a hard, calcified shell. He related a superstition held in La Vendée, that such eggs were the result of copulation between a snake and a hen, or between a cock and a snake. The hen naturally

makes an unusually loud clucking when so large an egg is laid, and the peasants, warned by the sound, cross themselves and hasten to crush the egg beneath the heel. In their opinion, such an egg can germinate only when lain upon by a cat, and under such circumstances there is hatched out a "basilisk," whose glance is fatal to any person or animal. It will even prove fatal to the monster itself if it looks at his own image in a mirror; and it is in effect in this way destroyed.

DR. GEORGE J. ENGELMANN, of St. Louis, upon invitation by the President, stated that shortly before leaving home he had been shown a hen's egg that contained within it a small, soft-shelled egg. He had been led to believe that in that case an inversion of the external membrane had given rise to this contained growth, the case being parallel to the formation of dermoid cysts. This explanation will not apply to the present instance.

MULTILOCULAR CYSTOSARCOMA.

DR. ENGELMANN exhibited to the Society an ovarian tumor which had been removed post mortem. The patient was forty-nine years of age. The tumor had been slowly developing for thirty years. The symptoms had been pelvic pains, menorrhagia, and metrorrhagia, the latter sometimes continuing for three months at a time. The abdominal enlargement had been perceptible for twelve years. There had been no menstrual flow since last December. She had had several febrile attacks. The case had been under the care of Drs. Simpson and Bell. She had been first tapped by Dr. Simpson in May last, after Dr. Atlee had refused to operate. The relief afforded by the tapping was so great, and reaction so rapid and complete, that the patient was about town in the afternoon of the day of the tapping. This operation had been repeated ten times in four months; the last occasion was one week before death.

At the autopsy the patient was found to be emaciated, the abdomen large; there was a thick deposit of fatty tissues in the abdominal walls, but the muscles were much atrophied. The tumor had formed adhesions anteriorly and laterally, and to the intestines; the liver was high up; the peritoneum thick and hard; pus welled up from the abdominal cavity.

The tumor had its origin in the left ovary, and was a multilocular cystosarcoma. Not a soft, rapidly-growing cancer, but a true round-celled sarcoma, undergoing fatty degeneration; on section, the central part of the mass resembled placental tissue; the outer part consisted of cyst upon cyst, and cyst within cyst.

Interesting points in this case are the long-continued hemorrhage, the increased size of the uterus, indicating a fibroid growth,

which was not found to exist. At the internal os were found two cysts, containing a straw-colored fluid; these were probably enlarged Nabothian glands. The hemorrhage had probably been due to the fungosity of the mucous membrane of the uterus.

DR. JAMES TYSON had examined the tumor with Dr. Engelmann. On account of its freshness and softness, thin sections could not be made, but when a portion was teased out under the microscope no stroma could be found; the tumor seemed to consist entirely of small, round cells and blood-vessels.

DR. GOODELL had never seen the case alive. He had been kindly invited by Drs. Simpson and Bell to be present at the autopsy. After the abdomen had been opened, the tumor had the appearance of a round mass covered with folds of intestine. The peritoneum was so much thickened that it was dissected off for some distance by mistake. The tumor had a false second covering, consisting of a layer of lymph. Dr. Goodell regretted that the uterus had not been examined by the microscope, for he did not think that it was merely hypertrophic, but that it had also undergone a similar degeneration of its substance. The cervical cysts, before spoken of, were the size of hazel-nuts, and were probably the result of sarcomatous degeneration of uterine tissue, and not enlarged Nabothian glands.

DR. A. H. SMITH expressed a similar opinion. During pelvic irritation, growths, or inflammation, hemorrhages frequently occur.

DR. ENGELMANN thought the growths may have resulted from pelvic congestion and irritation, while they, in turn, caused the hemorrhages.

DR. GOODELL exhibited a

SELF-RETAINING DUCKBILL SPECULUM,

devised by Dr. Erich, of Baltimore. After trying a number of self-retaining specula of the duckbill form, he believes this one to be the best. It kept its position perfectly, and, in operations, enabled the physician to dispense with the services of one assistant.

DR. J. L. LUDLOW exhibited an

INSTRUMENT DESIGNED TO REDUCE FLEXIONS OF THE UTERUS.

It resembled a sound, two and a half inches of which consisted of links arranged like the joints of a lobster's tail, so as to flex in one direction only, remaining perfectly rigid if force were applied in any other direction. The instrument is to be inserted into the uterus in such a way that it will accommodate itself to the existing flexion, then, by simply turning the instrument, the organ is straightened.

DR. A. C. W. BEECHER had had frequent need of a placental

forceps to remove adherent placentæ, in cases of miscarriage about the fourth month. The instrument he had heretofore tried was made after the pattern of Dr. Bond. In his hands it had proved very unsatisfactory, as it crushed through the soft mass, but would not hold with sufficient power to tear it from the uterine wall. He now exhibited to the society a pair of

PLACENTAL FORCEPS OF NEW DESIGN.

The blades are fenestrated and bent sharply a short distance from the point; they are so constructed as to grasp, but not to cut, the blades not coming in contact, except for an inch at the extremity. The blades are so rounded that they may be used as dilators.

DR. EDWARD L. DUER read the history of a case of

EXTRAUTERINE FETATION.

Mrs. F——, æt. 37, born in Massachusetts, engaged me in July, '75, to attend her through her fourth confinement in the coming October, the last previous confinement having occurred seventeen years before. She had been a widow, and this was the first pregnancy of her second marriage. She represented to me that about the third month she had had quite a sharp attack of peritonitis; was then under the care of Dr. Washington L. Atlee, but no suspicion of the cause was then entertained. It soon passed off, however, and development of size continued without any peculiarity of symptoms.

Sept. 18th, I was summoned by an attack of uterine pain, lasting but a short time, and accompanied by a slight show of blood. I found the os high up, and remarkable only for its small size. An anodyne suppository soon afforded perfect relief, however, and a repetition of the attack was postponed till Oct. 4th; again resort was had to the opiate with, this time, only temporary results—a repetition being necessary once, or oftener, every day. There was nothing remarkable about the pains, as yet, to distinguish them from those of an ordinary false labor, excepting their occasional accompaniment with a *slight* bloody discharge.

On the 15th of same month, I was again hastily summoned and found her suffering continuous severe pain, and quite a smart hemorrhage; and having my right hand disabled by a painful abscess, I requested my friend, Dr. Goodell, to accompany me and take charge of the labor, which, up to this time, I had not suspected as anything remarkable. A thorough examination now soon developed the true state of affairs. The womb, much enlarged, was dragged out of the pelvis and pushed forcibly over to the left side, whilst the enlarged os and cervix were presenting behind the pubis,

and correspondingly difficult to reach. The contour of the abdomen was also peculiar from its tumefaction taking an oblique direction upward from the left iliac region, to the lower border of the right lobe of the liver. Nor was this enlargement quite symmetrical; inasmuch as at a point a little above and to the right of the umbilicus, there was a pouting elevation about three inches in diameter, where the liquid contents of the probable fetal cyst seemed about to "point," and where the whole interposing tissue did not seem more than half an inch in thickness. Through the abdomen, at this point, the angular projections of the fetal limbs could be readily felt. The head seemed to lie in the left iliac region.

After quieting the pain and nervous agitation consequent on a prolonged examination, the patient was allowed to rest for a few hours, and at the expiration of that time, Dr. Wallace was added to the consultation.

I should have remarked that fetal movements, though feeble, were recognizable by the patient, and the fetal heart-beat by us, up to this time; but they both soon entirely disappeared.

The patient, a woman of remarkable courage and philosophy, required a statement of her condition, and received it as only such a woman could. Even her nervous system suffered little in consequence, nor were her general symptoms at all alarming, considering the amount of blood she had lost, and the natural anxiety for the adoption of some radical effort for her relief.

The general conviction of the consultants, nevertheless, was in favor of delay, with the view of securing a better condition for operative interference.

Thus matters continued nigh unto the end. The patient took a fair quantity of liquid food, slept well under anodynes, had no extended or pronounced peritonitic tenderness, no great elevation of temperature, but all the time a greatly accelerated pulse. The temptation to operate—not in the canonical way, but by incision into the cyst-like prominence, at the side of the umbilicus, was constant and great; but in accordance with what then seemed a better judgment, the temptation was put aside "just" too long. Our meetings were daily for sixteen days; but at no time could we all get self-consent to the assumption of a responsibility of a possible death of our patient under the knife. On the evening of the sixteenth day, I was summoned hastily to her side to find her in the last agonies of death. She had seemed so much better throughout the day that her husband had, for the first time, left the house for an hour's absence, during which time she was seized with agonizing pain, which was at once accompanied with collapse and resultant

death, all within thirty minutes. A post mortem was strenuously denied.

My only reflection on this case is the regret of non-operating. In the light of present knowledge of enhanced chances by so doing, and "the danger of delay in operating, in the hope that adhesions may form and an abscess point, so that the fetus may be cut down upon and removed with less risk of peritonitis," I believe our treatment would have been far different, and possibly have furnished us a different result.

DR. GOODELL had been called in consultation in this case. The os uteri was freely dilated, and examination by the finger caused alarming hemorrhage. The intense anxiety of the husband, who wished an assurance of success for operation, which could not be promised, hampered the doctors, and prevented either of those present from assuming the responsibility.

Dr. Goodell had seen another case, soon after the one reported by Dr. Duer. The woman was in extremis, and the family would not consent to an operation.

Stated Meeting, November 7, 1878.

The President, DR. JOHN H. PACKARD, in the Chair.

DR. W. H. PARISH presented to the Society

A DISTORTED PELVIS FROM A RACHITIC NEGRESS,

and read the following history :

The woman from whom this pelvis was taken was a negress about twenty-five years of age, and of a rachitic build. At the full period of her first pregnancy she went into labor. It was soon detected by the gentleman in charge of the patient that there was a narrowing of the superior strait, and, though considering the narrowing too great for satisfactory use of the forceps, he, unaccountably, deemed it best that the unfortunate woman should be left to the efforts of Nature to effect delivery.

The child was living when labor began. Three or four days after the rupture of the membranes and the onset of actual labor, a decomposed child, presenting a shapeless mass, was forced into the world by the woman's unaided efforts. By this time great exhaustion had supervened. To remove the placenta—Crédé's method proving unavailing—attempts were made to introduce the hand into the uterus. But, although several physicians made the trial, the hand could not be made to pass the superior strait. The placenta remained undelivered, and in a day or two more the patient died. At the autopsy, the uterine cervix and other soft

tissues in the pelvis were in a state of gangrene. There had been but slight hemorrhage.

Having never myself seen the patient, we are indebted for the above short sad history to one of the gentlemen who saw the case, and to him I am also indebted for the interesting pelvis.

This is stripped of the soft tissues, and is distinctly characteristic in its deformity. Three of the lumbar vertebræ remain attached, and present marked lordosis. The superior strait is markedly kidney-shaped, the promontory juts forward, the pubic symphysis is flattened backwards; the deformity is not symmetrical (the left half being smaller than the right), the promontory is diverted to the left, and the left antero-lateral portion is pushed farther backwards than is the corresponding portion of the right side.

Measurements :—

Superior strait, antero-post. conjugate.....	2 in.
“ “ right oblique “	2 $\frac{1}{8}$ “
“ “ left “ “	1 $\frac{1}{2}$ “
“ “ transverse	4 $\frac{1}{2}$ “
“ “ left oblique	4 $\frac{3}{8}$ “
“ “ right “	4 “
From the under border of the sub-pubic ligament	
to the sacral promontory	2 $\frac{7}{8}$ “
Excavation, ant.-post.	3 $\frac{1}{2}$ “
“ transverse	4 $\frac{3}{4}$ “
Inferior strait, ant.-post.	3 $\frac{1}{2}$ “
“ “ transverse	4 $\frac{1}{2}$ “
“ “ each oblique	4 $\frac{5}{8}$ “

It will thus be seen, that the inferior strait is much larger than is the superior strait; in fact, that the tuberosities are so forced outward that the transverse and two oblique diameters are above the normal lengths.

Depth along symphysis	1 $\frac{1}{2}$ in.
“ “ the face of the ischium	3 $\frac{3}{4}$ “
“ from promontory straight to end of the sacrum,	3 $\frac{7}{8}$ “
“ following the sacral curve	4 $\frac{5}{8}$ “

I do not fully understand why the hand could not be passed above the superior strait during life. Possibly, the difficulty may have been due to attempting to pass the hand with the dorsum to the hollow of the sacrum, as even in this bony pelvis to pass the hand thus is difficult. If the palm of the hand had been turned to the promontory, the hand could, it seems to me, have easily passed

the strait, the concavity of the palm of the hand being adapted to a very prominent sacrum.

It is very evident that the woman should have been delivered by craniotomy, by Cesarean section, or by gastro-elytrotomy.

Were I called to a woman at the full period of pregnancy, with such a pelvis, and the child living, I should prefer gastro-elytrotomy to either of the two other modes of delivery.

DR. W. T. TAYLOR inquired why Dr. Parish would prefer gastro-elytrotomy to craniotomy when the child was already dead?

DR. PARISH did not prefer gastro-elytrotomy to craniotomy when the child had been for some time dead, yet considered the dangers attendant upon craniotomy, in so small a pelvis at the full period of pregnancy, greater than those of gastro-elytrotomy, as the long-continued manipulation, the powerful traction employed, and the prolonged pressure to which the soft parts of the pelvis were subjected, were not infrequently fatal, and often were the cause of sloughing, and of consequent contractions and fistula. In this case, the child was not dead at the beginning of labor.

DR. ELLWOOD WILSON wished to know why premature labor had not been induced?

DR. PARISH could not answer, as the case had not been under his care, and he knew nothing of the history of the pregnancy.

DR. ELLWOOD WILSON had had living children born by premature labor, induced at the eighth month in deformed pelvis. One such instance was fresh in his memory, where the finger introduced into the vagina could trace up the sacrum, from the coccyx to the promontory, without undue pressure of the hand upon the perineum, and where the antero-posterior diameter, at the superior strait, was not more than two and a half inches; the child weighed about five pounds.

DR. PARISH doubted the probability of delivering even a seven-months' living, uninjured fetus, through a pelvis whose superior strait measured only two inches antero-posteriorly, deprived of the soft tissues.

DR. ALBERT H. SMITH considered the question of induction of premature labor an open one. He called attention to the history of well-known cases, in which, after one or two craniotomy labors, the mother, in a subsequent labor, gives birth to a large child at full term, without instrumental assistance. Spiegelberg had collected the histories of a large number of such cases and, according to his tables, the result had been more favorable when Nature had been left alone, or the forceps employed to assist Nature at the normal termination of the pregnancy.

DR. ELLWOOD WILSON had had five such cases under his own care; in all of them he had induced premature labor, and in all he was successful.

DR. A. H. SMITH did not doubt the ability of Dr. Ellwood Wilson to bring such cases to a successful termination; but we must consider that, in laying down rules for certain contingencies, they are

not made for experienced, scientific practitioners, but for the mass, and the results of cases treated by physicians in general must be the best guide to probable saving of life.

DR. LUDLOW considered experience and skill founded on common sense the necessary qualifications for success in any case. He did not think any general law could be laid down, each case must be a law for itself.

DR. PARISH thought there was much yet to be learned as regards the mechanism of labor in deformed pelves. Why should one labor be difficult and another in the same pelvis easy with even a larger child? In a case which had recently been under his care, the first labor, in the practice of two physicians of an adjoining State, had resulted in a badly marked child which died soon after birth in consequence of inflammation of the brain, from injuries received from the forceps, one pair of which were broken in the efforts at extraction. The mother's perineum and vagina were badly lacerated, and the consequences were cicatrices, contractions, and adhesions, so that when the next pregnancy had advanced to three months, and the same practitioners sought for the os uteri in order to produce an abortion, they could not find the opening. In this case the antero-posterior diameter of the superior strait was calculated to be three inches. When in the second pregnancy labor came on at full term, Dr. Parish broke up the adhesions which prevented the dilatation of the os, applied the forceps, and delivered without difficulty a child weighing ten and a half pounds. The position was occipito-posterior, and this, instead of complicating, may have rendered the labor easier; for, as there was a projecting promontory, the pointed occiput seemed to fit into the space to the side of the promontory, when, if the forehead had been posterior, it would have lodged against the top of sacrum. The perineum, badly torn in the first labor, had been united by a secondary operation, and in this labor was but very slightly torn. Both mother and child did well.

PREMATURE SEPARATION OF PLACENTA.

DR. R. G. CURTIN had recently employed Barnes' dilators in a case of premature labor; they seemed to cause a localized abdominal pain which was complained of by the patient. A very free hemorrhage came on afterwards, the consequence of premature separation of the placenta. Does the use of dilators predispose to localized contractions of the uterus? In the next labor (a premature one), a living child was born.

NEW CEPHALOTRIBE.

DR. W. H. PARISH exhibited a cephalotribe as modified by Drs. Ellerslie Wallace and Proeger. By turning a knob, teeth can be erected in each blade, so that a firm hold may be taken of the crushed head and the instrument be used satisfactorily as a tractor.

DR. PARISH also exhibited two pairs of

FLEXIBLE FORCEPS,

as devised by Dr. Proeger for extraction of foreign bodies or tumors from the esophagus or other passages requiring a curved instrument.

DR. LUDLOW spoke of the difficulty of keeping the teeth of the cephalotribe, and the machinery by which they are operated, clean and in working order.

OVARIAN CYST.

DR. ELLWOOD WILSON exhibited an ovarian cyst which had been removed, October 22d, from a young woman seventeen years of age, who in all other respects enjoyed good health. It was exhibited to show the fallacy of tapping. On examination, the tumor seemed to be monocystic, but when removed it was found to contain within it two small cysts, which would quickly have enlarged to the full size of the original. The pedicle was very vascular. The operation was successful.

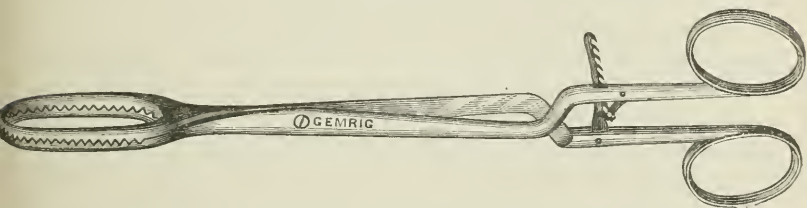
DR. ALBERT H. SMITH exhibited an ovarian tumor which was remarkable from having a smaller pediculated cyst springing from the wall of the principal one. The patient had always enjoyed good health up to the time of the discovery of the tumor, eight months ago. On external examination, the growth seemed to be a monocyst, no lobulation or sulcation could be discovered; the small cyst could be felt, but gave the impression of an adhesion to the spleen. On section, the abdominal walls were found to contain two and a half inches of adipose tissue, very vascular; the vessels were too small to tie, but kept up a profuse oozing of blood which interfered materially with the progress of the operation. No anterior or intestinal adhesions were found. The tumor was tapped by means of Hodge's trocar, and two quarts of fluid were withdrawn; but the main cyst was now found to contain a large number of small tumors filled with a gelatinous substance, and breaking on the slightest touch. The omentum was very thick and vascular, and tore upon handling. When the attempt was made to extract the tumor, it was discovered that the pedicle had formed adhesions posteriorly, which prevented the collapsed cyst from being drawn through the abdominal opening. A Baker-Brown's needle, armed with double silk, was passed through the pedicle, and the ligatures tied. This operation was performed by the sense of touch only, the pedicle could not be seen. The traction upon it had caused free hemorrhage, and after the tumor had been removed, it was seen that the ligature had torn upward an inch, leaving another source of hemorrhage. It was again tied lower

down, and was dropped into the abdominal cavity, as a clamp would not remain outside of the abdominal wall. The other ovary (the right) was now found to be the seat of numerous cysts, although not much enlarged, and its Fallopian tube was greatly congested; a ligature was placed around the tube and the ovarian ligaments, and the gland was removed. Blood was now seen to be escaping into the peritoneal cavity, and after diligent search the right Fallopian tube was found to be the source. This was again secured. The operation occupied three hours. Peritonitis set in, and the patient died of hemorrhage from an omental vessel.

Dr. Smith thought that an important factor in the fatal result of this operation was the delay caused by the removal of the second ovary. Schroeder's rule, not to remove the second ovary unless very much enlarged by disease, is undoubtedly a good one.

CYST FORCEPS.

DR. SMITH exhibited a pair of cyst forceps of new design; they are strong, blunt-toothed, and fenestrated; one blade may be introduced within the cyst through the opening made by the trocar,



and firm traction can be made without danger of slipping. The doctor also spoke in very high terms of the advantages of the Hodge trocar.

OVARIOTOMY.

DR. WM. GOODELL indorsed Dr. Smith in his remarks concerning the non-advisability of the removal of the second ovary. The pedicle is necessarily very short, and there must be considerable traction exerted upon the Fallopian tube. This is a source of severe nervous shock to the patient. Hemorrhage is likely to result from the traction, the ligature is applied upon the extended tissue and is displaced when the traction ceases. Dr. Goodell had had two fatal cases of double ovariectomy, and if he were again called upon to perform the operation, he would remove the second ovary by means of the electric cauter or the ecraseur.

He had been surprised to see how an ovary that seemed to be entirely changed by disease could give power for conception, even

after it had been deemed advisable to tap it for cystic degeneration.

Last week he had performed ovariectomy at the University Hospital. He had used all the precautions that could be employed, the atmosphere of the apartment was saturated with carbolic spray, the instruments and the hands of the operator were washed with carbolic lotion, all the precautions of the Lister method were used. There had been no serious adhesions, the tumor was very large, so as to require a long incision, the pedicle was dropped into the abdominal cavity; but notwithstanding all precautions, septicemia was developed on the third day, two stitches were removed from the lower part of the wound and the cavity washed out with a two-per-cent solution of carbolic acid, and all fluids removed from the abdominal cavity, but without averting the fatal termination. He would not again operate in a hospital.

DISINFECTANT WASHES, AND INJECTIONS.

DR. J. L. LUDLOW considered the free employment of antiseptics a source of danger; they were all poisonous. He suggested the use in such cases of water boiled under pressure, as a wash which would be less irritating and an efficient cleansing agent.

DR. GOODELL considered water as suggested by Dr. Ludlow merely a cleansing agent. It was not a germicide or disinfectant, besides we know that mucous membranes, as of the eye or nose, will be more irritated by plain water than if it contain a small quantity of carbolic acid or salt, and serous membranes are probably affected in the same way. In his next operation he will use the liquor sodæ chlorinatæ as a spray. In one instance he removed a large ovarian cyst through the vagina; a collection of offensive pus took place in Douglass' pouch, he tapped it by means of the aspirator and injected a mixture of the solution of chlorinated soda, two fluid drachms to the pint of water, into the peritoneal cavity twice a day. The beneficial effect of the injections was immediately apparent.

DR. ALBERT H. SMITH testified to Dr. Goodell's care in the case described by him as regards the use of carbolic acid. He has no doubt that antiseptics are absorbed as suggested by Dr. Ludlow. Dr. Smith narrated a case where, without the advice of a physician, injections of carbolic acid were used for ascarides. The local irritation was relieved, but on the fourth night the injection was retained, and the child became rapidly collapsed. A quantity of warm water was immediately injected without effect, the collapse deepened into profound coma; pulse 220 per minute, the skin cold and clammy, and a rattle in the throat. At this juncture Dr. Smith was called in. A very strong decoction of coffee was now thrown into the rectum and hypodermic injections of digitaline given; reaction commenced, followed by vomiting and complete recovery.

Fritsch carries his antipathy to carbolic acid so far as to discountenance its use in injections into the uterus for the relief of post-partum hemorrhages, but Dr. Smith thought there could be no danger if the os uteri were patulous.

DR. CHAS. H. THOMAS recommended a solution of chloral as a disinfectant. Carbolic acid, if absorbed, will cause convulsions, but the chloral will do no harm, even if the whole quantity employed is absorbed. His attention was first called to this article by its effect in preserving pathological specimens. He had used it in fetid ulcers and cancerous sores, and in a case of chronic cystitis and urethritis. It checks the formation of pus.

DR. O'HARA inquired of Dr. Goodell the source of danger in new hospitals.

DR. GOODELL replied that the poison is so subtle that a single patient, or a student from the dissecting room passing through, is sufficient to impregnate the whole.

DR. ELLWOOD WILSON spoke of a case of operation for the relief of extrauterine pregnancy. The patient was under his care; the operation was performed by Dr. Agnew. She did well for six days, when it was considered advisable to inject a solution of five grains of permanganate of potash to two pints of water. The injection was favored by three experienced physicians, but was opposed by Dr. Wilson. The case terminated fatally.

DR. A. H. SMITH admitted he was one of those who recommended the injection in this case of Dr. Wilson's, and did not believe it had anything to do with the fatal result, but, on the contrary, was just what would generally be considered rational treatment.

The patient had steadily run up her temperature and pulse, and had a peculiarly fetid discharge from the vagina, which became the subject of discussion as to how it should be obviated, and the weak solution of permanganate was considered a safe resort. This case occurred many years ago. With the light upon intraperitoneal injection which we now have, we might ascribe the death rather to the weakness of the antiseptic than to its use. To say that in a case doing *perfectly well* for six days this injection was recommended is to misrepresent the case and to stultify the members of the consultation, as well as the attending physician himself who yielded to it.

Sponge Tampons saturated with glycerole of subsulphate of iron.

DR. JOHN M. KEATING exhibited some sponges, adapted for vaginal tampons in cases of metrorrhagia or menorrhagia. They were saturated with a glycerole of the subsulphate of iron and were compressed. He had employed them with great satisfaction.

Stated Meeting, December 5, 1878.

The President, DR. J. H. PACKARD, in the Chair.

DR. EDWARD L. DUER read a paper on

POST-MORTEM DELIVERY.¹

DR. GOODELL said that he had listened with great pleasure and much profit to the very valuable paper by Dr. Duer, and he had but one criticism to pass on it—viz., that the author had laid too much stress on the Cesarean section as the means of rescuing the lives of children. To carry out the fullest philanthropical object of the paper, he thought that its title should have been "The Delivery of Dead and Dying Women." Dr. Duer had laid down the axiom that the Cesarean section should not be performed until the woman were dead, and that the test of death was the cessation of the heart's action. But what physician had not seen gasp after gasp at long intervals, many minutes after cardiac pulsation had apparently ceased? No physician would venture to perform this operation until he were assured of his patient's death, and such an assurance could come only from delay—a delay which would seriously compromise the life of the child.

Again, it is well known that the os dilates and labor often begins during the last agony, and the head may have passed the os or have become so wedged in the bony canal as very greatly to delay the delivery by the abdominal section. For a case in point, Baudelocque relates that after a Cesarean operation, the child's head was found wedged so tightly in the pelvis that the operator could not dislodge it. Before it could be delivered, he had to get the husband to stand astride over his wife's body and pull with all his strength on the child's legs, while he himself pushed up its head per vaginam.

In view of these facts, he (Dr. G.) would much prefer to deliver a dying woman, or one whose death was not yet assured, *per vias naturales*, by the forceps if the head were low down, but in general preferably by turning. And if the os were not dilated or not dilatable, to make it so by incisions. Rizzoli and the school of Bologna had advocated this course, and had reported successful cases. Dr. Duer in his paper has told us that Oesterle had in like manner saved three children out of five. That, of course, this operation should not and could not be performed without the consent of the friends; but that he believes that the permission would be much sooner accorded than that for the abdominal section.

DR. JAS. V. KELLY remarked that his case had been (see AMER. JOUR. OBST., Vol. VIII., page 558) delivered *per vias naturales*. The patient died within two weeks of the full term of gestation. She had a capacious pelvis, and her previous labors had been remarkably rapid and easy. Different cases would probably demand different methods. He did not think the question of percentage should

¹ See page 1 of the January number.

be considered. If one child could be saved, it was a gain and would offset any number of unsuccessful attempts.

DR. M. O'HARA's case was one of death from coal-oil burn. He expected the woman to die, but made no attempt to deliver ante-mortem. The patient was in the sixth month of pregnancy, and he had no difficulty in delivering per vias naturales.

DR. W. H. PARISH knew of one instance in which the operation of Cesarean section was performed post mortem on a woman who was not pregnant. An ovarian cyst had caused the mistake.

DR. A. H. SMITH considered that no unsuccessful case should be taken into account. He thought Dr. Duer's axiom, not to operate where the cause of death was a blood-poison, was too sweeping. The child should always have a chance; the fact of not being able to hear the fetal heart is no proof of the death of the fetus. It is an acknowledged fact that, if an exanthematous fever occur in a pregnant woman, the child will generally be thrown off, and if it should remain and be taken away in consequence of the death of the mother, the child would in all probability be still, but that fact should not deter from operating.

DR. DUER alluded in his rule to blood disorganization as we see it in cholera. It is in deaths from this disease that the greater number of opportunities for operation have occurred and they have all been unsuccessful.

DR. O'HARA asked Dr. Goodell if he would advise ante-mortem delivery in a case similar to the one he had reported?

DR. GOODELL would if he could obtain the consent of the family.

DR. DUER called attention to the fact that, in Italy and other European countries, the law made such an attempt obligatory on the part of the attending physician.

DR. C. H. THOMAS thought that if we could assure the family that the insensibility of death had come on and that no pain would be felt by the dying woman, permission could generally be obtained to deliver per vias naturales, and this operation would be more easy before death than after it.

DR. KELLY moved a vote of thanks to Dr. Duer for his interesting and instructive paper.

DR. W. GOODELL exhibited a specimen of

EXTRAUTERINE FETATION,

with the following history :—

A young Southern lady, led astray by a married man, became pregnant. Her last catamenia ended January 16th, and she looked for her delivery on October 16th. Ineffectual efforts were made to get rid of the ovum, and instruments were for that purpose introduced on several occasions by some abortionist. To conceal her shame, she came on to this city in June, and put herself in the hands of a very competent physician. From him I learned to-night, for the first time, that she had occasional "colicky attacks" of great

severity, and in July last had quite a sharp hemorrhage. The cervix uteri was at this time low down, almost protruding. On account of the severity of these attacks and the peculiar position of the cervix, a skilled physician was called in. But nothing grew out of this consultation, other than the recognition of the fact that the uterine canal was sharply bent forward.

During the second week of October, labor, to all intents and purposes, set in; but, although the pains continued for several days, no impression whatever was made on the os uteri, and now another excellent medical gentleman was called in. The fetal heart-sounds, although listened for at the last consultation and again at this one, were never heard. The diagnosis was death of the fetus and missed labor, and the decision arrived at by the consultation was to await developments, and, if needful, to put sponge-tents in the canal and start the process of dilatation. This was not, however, done, as the attending physician, being shortly afterwards suddenly called away to a distant part of the country, left his patient in charge of my friend, Dr. John Graham, who first saw her on Monday, November 18th. He found the abdomen acutely sensitive, the uterine tumor very sharply defined, the pulse very weak and frequent, and his patient in a very feeble condition. She steadily grew worse, with symptoms of peritonitis, and on the following Saturday, November 23d, he called me in.

I met him at 8 P.M., and found the young lady in a very pitiable condition. She was wandering somewhat, was gasping for breath, and lying with her knees drawn up. The abdomen was greatly distended, and so sore to the touch that no information could be gained through its walls. The pulse was very feeble and frequent, and she plainly had but a few more hours to live, unless some relief could be given her. The symptoms were like those of peritonitis, and yet there was an ill-defined something about them that led me to question such a diagnosis. I found a very long cervix high up and sharply bent forward around the pubic symphysis. The os uteri was large enough to admit the finger, but the cervix was too long and too high up for me to reach the cavity. The pain and the distress from the examination was so great that I had to do it in a very hurried and superficial manner.

Dr. Graham had received very little information about the previous history of the case; the nurse, who had just been engaged to replace a former one, knew still less; and the poor girl was too far gone to give any account of herself. I, however, twice asked her if she had ever menstruated during her pregnancy, and each time received for an answer simply the word "once."

In view of this answer and of the fact that several very excellent physicians had been puzzled to account for her symptoms, in view also of the extreme rarity of missed labor and of ante-partum peritonitis, and especially of the very remarkable ante-flexion and ascent of the cervix, pointing to a post-uterine tumor, I gave a diagnosis of extra-uterine fetation. After a hurried consultation, it was decided to pass a flexible catheter up into the uterus, for the purpose both of establishing the diagnosis and of bringing on labor if the pregnancy were a natural one. The catheter had been passed in fully five inches, when, to my surprise, about half a pint of a dark fluid, apparently loaded with meconium, escaped through it. This greatly staggered me, for it looked like liquor amnii, and seemed to show the existence of a uterine ovum. But so impressed was I with the physical and rational signs of extra-uterine fetation, that I accounted for this liquid on the theory of a double pregnancy, one intra, the other extranterine. Nothing further was done, and I agreed to meet Dr. Graham at any hour during the night he might send for me. But our patient soon began to sink, and died at 4 o'clock on Sunday morning.

On the following Wednesday, Dr. Graham and I met to make an autopsy. This was conducted under circumstances of great difficulty. The body had been removed to an undertaker's, where it had been placed in a mixture of salt and ice, in order to prepare it for transportation to a distant city. Accordingly every portion of it, solid and fluid, was frozen stiff. On laying open the abdominal cavity, we found the parietal peritoneum entirely free from all traces of inflammation. A large dark and purple sac at once came into view, which we both at first mistook for the gravid womb. It was found extremely thin and brittle, and tore like blotting paper. It contained a full-grown and unusually large fetus which had long been dead, for its skin had begun to peel off. Over what ought to have been the os uteri internum lay attached the placenta, as if previa. Continuing his researches, for Dr. Graham made this very difficult autopsy, he found a very much enlarged and empty womb lying partly behind and partly above the symphysis. Everything was now plain. The right and left ovaries were in situ, but the left Fallopian tube was lost in an immense sac, which started from the left cornu and contained the fetus. At its upper portion this sac was very thin, being composed of the proper fetal membranes alone. The sides were made up of adventitious membrane closely adherent to the surrounding structures. The lower part consisted of the enlarged womb in the middle line, and of the broad ligaments. In view of these facts, I consider the gestation

as having been a ventral one, but whether primary or secondary I am not able to determine.

The specimen which I exhibit to you is the womb and attached to it a small portion of the sac. On account of the frozen condition of the body it was impossible to remove any more than this. The womb is very much enlarged and thickened. Its cavity contains a pulpy mass resembling decidual membrane, but no trace of a fetus. The only way that I can explain the presence of the fluid which was drawn off from its cavity by the catheter is as follows: either the effort made at inducing criminal abortion had caused a slight closure of the os internum, or else the very sharp bend in the cervix had done the same thing. When the liquid came away I at first thought that I might have forced the catheter, which was armed with a stiletto, through the walls of a thinned-out womb into the extrauterine cyst. But the remarkable thickness of the uterine walls, the absence of any lesion, and the slight force that I used, preclude any such supposition.

Dr. Ellwood Wilson read for Dr. JOHN GRAHAM the histories of

TWO CASES OF TUBAL PREGNANCY TERMINATING FAVORABLY AT THE FOURTH MONTH BY SPONTANEOUS DELIVERY THROUGH THE UTERUS.

CASE I.—M. C., married, aged 27 years, has had one miscarriage about a year ago, which was followed by slight symptoms of uterine trouble, relieved in a short time by “applications.”

Her menses returned at the regular periods from the time of the miscarriage, until about August 1st, the expected time, when they failed to appear and she saw nothing for the next two succeeding months, and was affected with nausea, vomiting, uncomfortable feelings in the pelvis and enlargement of the breasts, and believed herself to be pregnant.

About October 1st, she was seized with moderate pain in the lower part of the abdominal cavity, and noticed a show of blood which has returned to a greater or lesser amount every few days since. At times it was considerable in quantity, enough to soil several napkins daily. She tells me that when the pains increased in severity, the discharge of blood was greatest.

I saw the patient for the first time, Nov. 8th. She was then suffering from almost constant pain in the lower portion of the abdomen and pelvis, and vomited incessantly.

I ordered ingluviu, ten grains every two hours, which almost immediately removed her stomach trouble, and she has vomited but seldom since.

On examination through the abdominal walls, I found what ap-

peared to be the outline of the uterus, reaching up but a short distance above the symphysis, and lying somewhat to the left of the median line.

To the right of the uterus I could feel an irregular, doughy mass, reaching outwards towards the pelvic brim, its upper border not being so high as that of the uterus. It was slightly tender to the touch. I could not detect any fluctuation. I listened, but could not discover the beat of a fetal heart.

On vaginal examination, I found the os soft and slightly enlarged, and to its right, the same irregular mass felt through the abdominal walls, projecting down against the roof of the vagina and encroaching somewhat upon its cavity. On conjoined manipulation through the vagina and the walls of the abdomen, this swelling seemed to be in the tissues of the right broad ligament.

From the above history and symptoms, I made up my diagnosis of extrauterine pregnancy, probably tubal, and after explaining to the husband the nature of the case and his wife's danger, I advised waiting until urgent symptoms arose.

Met Dr. Ellwood Wilson in consultation, November 28th. The doctor, after a careful examination, agreed with me entirely in my diagnosis, but differed in regard to treatment. He advised immediate operative interference, and favored opening the vagina through its roof by cautery knife, penetrating the sac, and drawing off the fluids. He desired in this manner to destroy the vitality of the child, but did not favor using any force to effect immediate delivery of either the child or placenta.

As we differed in opinion in regard to treatment, we concluded to call in Dr. W. L. Atlee and abide by his decision.

Dr. Atlee met us on the morning of Nov. 29th, and confirmed our opinion in regard to the nature of the case, that is, extrauterine pregnancy, probably tubal.

At this examination both Dr. Wilson and I noticed that the more central mass, which we supposed to be the uterus, had somewhat increased in size since the day previous, and was much more prominent on inspection of the abdomen. We did not notice any decrease in the mass to the right.

Dr. Atlee had considerable difficulty in introducing the sound in making his examination, and on measurement we found it had only entered two and one-half inches. It had entered three and one-half inches the day before. We also noticed that it lacked that freedom of movement when inside the body of the uterus that both Dr. Wilson and I had felt the day previous. The examination with the probe on this occasion also gave much more pain than on the day before.

After mature deliberation, Dr. Atlee agreed with Dr. Wilson in advising immediate operative interference, and proposed abdominal section, the removal of the fetus and cyst entire, and application of a clamp to the pedicle outside.

We finally agreed in favor of opening the abdomen, and the next day, Nov. 30th, at 11.30 A.M., was appointed as the time for operating. We left our patient's house about 2 P.M.

I called to see the patient again at 8 P.M., and found her suffering from strong bearing-down labor pains, recurring at intervals of one and one-half minutes and lasting three-quarters of a minute. The abdomen was very tender to the touch, and the muscles hard and rigid. I could not distinguish if the uterus or the enlargement to its right contracted during the labor pains. I injected one-third of a grain of sulphate of morphia hypodermically, and returning in two hours found my patient had been sleeping comfortably during my absence, and was still quiet. I went home and was called again in a great hurry at midnight.

On my arrival at my patient's bedside, I found she had delivered herself of a well-developed fetus of about four months. It was dead, but from appearance had not been so long.

On introducing my finger, I found the vagina intact, and easily removed the placenta which was projecting from the uterine os.

Patient had lost but little blood. The uterus was firmly contracted, and the enlargement to its right had almost entirely disappeared.

I made a careful digital examination of this part the next morning through the vagina and abdominal walls, and found nothing abnormal, excepting very slight increase in bulk in what appeared the right broad ligament.

Patient at this time was comfortable, and doing almost as well as after an ordinary case of miscarriage.

Mrs. C. continued to improve in her general symptoms daily, but I noticed, on vaginal examination, Dec. 3d (five days after her miscarriage), that the substance of the right broad ligament was occupied by a firm, hard mass, fully as large as a goose egg, and having but little tenderness to the touch. I judged it to be a deposit of lymph from cellular inflammation.

How can we explain this rather remarkable case and its fortunate termination?

In my opinion, the fetus was developed in the right Fallopian tube, close to, and probably surrounded in part by the muscular fibres of the uterine, and that this was its position when Dr. Wilson and I first examined her together. I believe that our manipulations excited

contractions, partly drawing the fetus and placenta into the upper part of the body of the uterus.

This would account for the fact that, on Dr. Atlee's examination on the following day, the uterus, which had increased in bulk when viewed from the abdomen, had actually shortened one inch in our interior measurement. Of course, when the fetus had once reached the cavity of the uterus, it became an ordinary case of miscarriage.

CASE II.—I was called January 11th, 1878, to visit Mrs. C—y, whose history and symptoms were as follows: She presented the ordinary signs of pregnancy, and complained of severe pain in the back, which had been increasing in intensity during the past two months.

She menstruated last about four months ago, and saw nothing since until to-day, when she had a considerable discharge of blood by the vagina.

On examination, I discovered the os pushed close up behind the symphysis. Its axis, as afterwards disclosed by the sound, was normal. Posterior to the uterus was a fluctuating mass, filling the cul-de-sac and projecting down into the vagina. The walls of the sack were thin. There was no retention of urine.

I placed the woman in the knee-elbow position, and with my fingers in the vagina, endeavored to gently push the mass upwards. I found it was impossible to do so, and my efforts were followed by a gush of fetid water from the vagina, which, on careful examination, I found came from the os, whenever I pressed on the fluctuating mass posterior to the uterus.

The discharge of water rendered the post-uterine sack less tense, and I then could distinctly feel that it contained a fetus.

I introduced the uterine sound without any trouble. It moved freely in the uterus, and passed straight up behind the symphysis, a distance of $3\frac{1}{2}$ inches. It gave no pain, and was not followed by any discharge.

I concluded that I had a case of tubal pregnancy to deal with, and, as my patient was now pretty thoroughly exhausted, I made her as comfortable as possible, and left, promising to call the next morning.

January 12th.—On visiting my patient this morning, I found she had been in labor for several hours, but was now feeling easier.

On introducing my finger to make an examination, I discovered a four months' decomposed fetus lying on the bed and the placenta loose in the vagina.

The fluctuating mass posterior to the uterus was much diminished in size and contained no fetus. The patient's pulse and general condition were good. She had lost but little blood.

January 14th.—The soft fluctuating mass posterior and to the right of the uterus is now semi-solid. Patient is stronger and apparently doing well.

January 20th.—On visiting my patient this morning, I found that during the night there had been a sudden discharge of a very offensive liquid from the vagina. She was much prostrated, covered with a cold, clammy perspiration and almost pulseless. This liquid in color and odor presented the appearance of being the same as that which was discharged the day before the birth of the fetus.

The tumor posterior and to the right of the uterus is in consequence much diminished in size, and is still firmer in consistence. The uterus has returned from being pushed up behind the symphysis almost to its natural position.

Under the use of stimulants, patient soon rallied, and I left her feeling comparatively comfortable.

Mrs. C——y was confined to bed for another month, but her improvement from this time was steady. The substance of the right broad ligament was filled with a hard, dense mass, which has continued slowly and gradually to decrease in size, and has been almost entirely free from pain.

DR. H. LENOX HODGE stated that he had been greatly interested in the report of these cases by Dr. Graham. More than ten years ago he had a case of tubal (tubo-uterine) pregnancy, in which he was so successful as to deliver a living child. He had the advantage of the advice and assistance of his father, the late Prof. Hugh L. Hodge. The treatment adopted was to dilate the os uteri by Barnes' dilators, and then scrape through the thin layer of tissue and membranes containing the child. The pregnancy had already advanced to about the eighth month. The mother did well, and the child lived for several hours. The case is reported in Dr. Parry's work on "Extrauterine Pregnancy."

This case, in which the delivery was accomplished artificially, and the cases reported to-night by Dr. Graham, in which the women delivered themselves without assistance, indicate that when the diagnosis of tubo-uterine pregnancy has been successfully made, the proper treatment is to deliver *per vias naturales*, and not by attempting to kill the child by electrolysis, or resorting to the abdominal section, or to cutting or burning through the vaginal wall.

DR. A. H. SMITH had read the history of this case as published. He inquired of Dr. Hodge upon what symptoms or evidences he based his diagnosis? What first caused him to suspect extrauterine pregnancy?

DR. HODGE replied: The external examination of the abdomen at once indicated a more irregular outline than is usual in ordinary

pregnancy, and the child appeared to be much more superficial than usual. The internal examination revealed the condition of the parts very plainly. His father passed his whole hand into the vagina and two fingers into the uterus, and with the other hand upon the abdomen explored the position of the fetus thoroughly, and determined its relations to the uterus accurately.

DR. ELLWOOD WILSON claimed that the method, although successful in one case, would be no guide in the treatment of another. When he had been called to see the first case whose history he had read, the tumor felt to the right of the uterus was distinct, and could be moved independently of that organ; it was distinctly tubal and not interstitial, and an opening scraped through the wall of the uterus would not be a direct method of reaching the child. This case had gone but four months, the tube or sac was in imminent danger of rupture, and he would not, on the history of any individual case, leave his patient in danger of rupture of the Fallopian tube.

DR. HODGE had, for this same fear of rupture, delivered prematurely; but if pregnancy was already advanced when consulted, it was possible to deliver a living child *per vias naturales*.

DR. GOODELL agreed with Dr. Wilson that the treatment of one case was no guide for another, and called attention to the fact that if the greatly thickened uterine wall of the specimen presented by him this evening had been scraped through, the operator would have come immediately upon the placenta.

DR. HODGE said that the treatment suggested was not proposed for such a case as that reported by Dr. Goodell, but only for tubo-uterine cases.

DR. WM. SAVERY related the following history of a case of

THROMBUS OF THE LABIA.

I was called hastily on the night of October 21st, 1878, to attend Mrs. V. S., aged 20 years, in labor with her second child. On reaching the house, I found that her delivery had already been accomplished; the patient had insisted upon getting up to sit on the chamber vessel, and whilst in this position a violent pain caused the sudden expulsion of the child, followed immediately by the placenta and its membranes.

On entering the sick-room, I was greeted by the patient with the statement that all was over and she felt all right, but her principal attendant, a near neighbor, reported to be skilled in such emergencies, drew me to one side, and mysteriously informed me that this was a very bad case; the patient's womb had come down after the baby, and she had attempted in vain to put it back again into place. She only hoped that I would succeed better. Being unprepared at the moment to make a vaginal examination, I placed my hand upon the patient's abdomen, and was gratified to

find the womb firmly contracted, and in its normal position. The pulse was regular, and full enough to satisfy me that no serious hemorrhage was taking place, and I then proceeded leisurely to make an investigation into the cause of the nurse's anxiety. Upon approaching the vulva, my finger came in contact with a hard pyriform tumor, the smaller end extending down between the thighs for several inches; the base of it was continuous with the integument of the abdomen; and the condition seemed so unusual that I determined to make an ocular inspection, which the patient readily consented to.

The tumor consisted of the right labium, which was so engorged with effused blood that it quite filled the space between the thighs as I have stated, and completely overlapped and hid from view the left side of the vulva. There was very little discoloration externally; the mucons membrane appeared to be inverted by the swelling and was with difficulty exposed.

Following the posterior edge of the lower extremity of the tumor with my finger, I found, as was to be expected, an extensive rent in the perineum, but happily it had not quite reached to the anus, and as it was entirely out of the question in the condition of the tissues to introduce sutures, I postponed any effort in that direction. The most prominent indication was to relieve the immensely swollen labium, and with this view I made with a sharp thumb-lancet numerous punctures upon its inner face, with, however, but slight escape of blood. Not having any opportunity to employ leeches at this time of night, I contented myself with the recollection that I had once witnessed a remarkable cure by gradual absorption in a somewhat similar case, and encouraged the patient and her friends with the hope that no troublesome results need be anticipated. Then applied soft cloth saturated with an anodyne lotion, and left her quite relieved and able to sleep.

Next morning I found the parts in much the same condition, except that the discoloration from the effusion was greatly more marked externally. The tension was scarcely diminished, and she had not been able to pass any urine. She was relieved by the catheter without much difficulty, and then expressed herself as feeling very well; the pain of the swollen parts was much diminished by the free application of lead water and laudanum on cloths. This treatment was continued for several days, when it became apparent that my expectation of seeing the cure effected by absorption alone would not be realized. A poultice of flaxseed meal and powdered charcoal to destroy the fetor was therefore substituted for the lotion,

and the softened tissues began to empty their contents rapidly, with a corresponding removal of the swelling.

On the 2d of November, I was startled to find that the patient had had a distinct chill in the early morning, and when I saw her about 10 A.M., was in a high fever, with a pulse of 130. This was the first indication she had given of any constitutional effects of her accident, and seemed strongly suggestive of septic poisoning.

She was immediately put under the treatment adapted to this condition: disinfecting washes were resorted to, and quinine, tinct. of iron, milk punch, etc., freely administered. In a very few days, the unfavorable symptoms disappeared, and thenceforth she went on steadily to complete recovery. The broken down and decomposing coagula which were discharged from the inner surface of the labium left scarcely any trace behind of their existence, and at my last visit, about the 18th of November, there was no evidence of the trouble visible, except a moderately increased vulvar opening, the posterior portion of the lacerated perineum having united to some extent.

This case seemed to me to illustrate the importance of preventing our patients from rising to sit upon the vessel, as they so often plead to do, when the child's head has passed the superior strait, and labor is far advanced.

The upright position, while in the act of straining violently, especially if the tissues be pressed upon the rim of the vessel during the effort, will tend, not only to the extravasation of blood, but also to the rupture to the perineum, as being the most unsupported part.

DR. DE F. WILLARD thought such tumors would do better if not punctured. He based his opinion upon his experience in the treatment of a large blood-tumor of the labia, the result of a kick. It occurred one week before the termination of pregnancy; the swelling, which was excessive, was accompanied by severe pain, for which cold anodyne applications were used. At the next visit some oozing of blood from the mucous surface was noticed, and the wall of the tumor at this point thinned rapidly and soon ruptured; the bleeding was profuse. The clots were turned out and the cavity packed with ice, but without effect; injections of Monsel's solution were also without effect upon the hemorrhage, which was finally checked by packing the cavity with rags saturated with Monsel's solution, and combining this with continued external pressure. The loss of blood had been so great as to put the patient's life in extreme jeopardy, and the doctor would hesitate to bring on such a danger by either punctures or a free incision.

Labor came on next morning, the plug was allowed to remain, and no further trouble was experienced. A remarkable circum-

stance connected with this labor was that not one drop of blood was lost, even the placenta being blanched and bloodless on delivery.

DR. EUGENE P. BERNARDY had been called in consultation in a case of difficult labor, in which, after violent efforts to deliver the child by means of the forceps, so violent indeed that the instrument was broken, he terminated the case by craniotomy. A thrombus of each labium was one of the ill-results in this case; peritonitis also supervening, the labia sloughed, and the patient died from hemorrhage from the separation of the slough. In another case he would open the tumor at once by a free incision.

DR. ELLWOOD WILSON remarked that the old established practice in such cases was to open freely from the mucous surface, empty out the clots, and employ hemostatics.

DR. W. H. PARISH believed in the advantage of free incision, but considered the proper place for this to be open to question. Thomas, of New York, recommended the mucous surface, while Fleischmann and Cazeaux preferred the cutaneous.

DR. SAVERY would make a free incision and turn out the clots if a similar case were to come again under his care. His reason for anticipating a spontaneous cure by absorption was his experience in a previous case. The forceps had been applied, and the physician in charge was making violent traction, when they suddenly slipped and were drawn from the vagina with great rapidity, causing a severe laceration, and an enlargement of both labia, with a general ecchymosed condition of the neighboring tissues. The case was terminated by craniotomy, and the patient recovered, the only bad result being a slight enlargement of the vulvar orifice, the posterior part of the perineal laceration having united spontaneously. It had not been considered advisable to use sutures.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Reported by J. W. UNDERHILL, M.D., Secretary.

Stated Meeting, November 14, 1878.

DR. J. J. QUINN, *President, in the Chair.*

DR. W. W. HENDERSON read the following report of a

CASE OF TUBAL PREGNANCY—FATAL TERMINATION AT SIXTH WEEK.

“It has never been my lot to meet with a case of extrauterine pregnancy until very recently, the case being a fatal one occurring in the practice of Dr. T. N. Wise, of Covington, with whom I

visited the patient in consultation. This offered me an opportunity, not only to witness the phenomena of the affection during life, but to contrast them with the results of an examination after death.

Mrs. W——, aged 33 years; had three children, respectively eleven, eight, and six years old; had been married thirteen years; had two abortions, one at three months in the year 1876, and the other at six weeks' gestation in the year 1877.

She had menstruated regularly for about one year thereafter, the last period being about the first of September, 1878, hence missed her flow in October last for the first time.

She was a woman of medium size, intelligent and full of life; had enjoyed excellent health, with the exception of these abortions, from the effects of which she, however, recovered entirely within a reasonable length of time. On the 17th day of October last, she visited the office of Dr. T. N. Wise, to whom she represented that she was confident and fully satisfied that she was pregnant, and that she must be in her sixth week of utero-gestation.

She had been in unusually good health until about ten days before she called at the office of Dr. Wise. She stated that during those ten days she had paroxysmal pains, at times very acute, in the region of the womb, and it was for this she was seeking advice. Dr. Wise prescribed for her, after which she left for her house, about five squares off. On her road home, she was suddenly seized with an acute, cramping pain in the right iliac fossa, succeeded by a feeling of faintness, which increased until she reached home, when she was so exhausted that it required the assistance of friends to take her from the car into her residence.

Dr. Wise was immediately sent for, and when he arrived found her pale, pulseless, and bathed in a profuse, cold perspiration. He prescribed whiskey and carbonate of ammonia, but finding that she gave no signs of reaction, he called for me to visit the patient with him. We found her still in the collapsed state in which he had left her, with intense nausea and vomiting. In vain we looked for the cause of this extreme exhaustion and collapse. Seeing that there was only one indication—to stimulate and sustain the patient, and finding that her stomach would not retain anything, we gave her a quarter of a grain of sulph. of morphia hypodermically. Nothing that was done seemed to give any relief, and she gradually sank, until about seven or eight hours after her attack she died. Under all the circumstances, it is useless to say that we were very much gratified to learn that we could have the privilege of making a post-mortem examination. Twelve hours after death, in the presence of Drs. T. N. Wise, J.

T. Wise, K. Pretlow, C. F. Thomas and myself, the *sectio cadaveris* was performed by Dr. C. H. Thomas. The cavity of the abdomen was found filled with a sero-sanguineous fluid, whilst the lower portion of the abdomen and pelvic cavity contained a large quantity of clotted blood. As soon as the blood was removed and the parts cleaned, a ruptured sac was discovered, involving the right Fallopian tube a little external to the middle and on the upper side of that tube. The clots were then examined and found to contain an embryo of about six weeks' gestation, and this was so closely and tenaciously adherent to the clots that it was with some difficulty that it could be separated without bursting the sac containing the embryo. The uterus, which was of much more than the ordinary size, was then opened longitudinally, and found to contain about an ounce of a dark, chocolate-colored fluid, inclosed in what seemed to be deciduous membrane. There was no discharge whatever from the womb through the os, nor could we see any evidence of the passage of blood through the Fallopian tube, as that canal seemed to be in a state of complete occlusion. The uterus and its appendages were then removed, and I have the pleasure of bringing the entire specimen before you this evening for further inspection.

One of the difficult problems connected with vicarious gestation consists in giving a plausible cause for this strange freak of nature. It has been attributed to mental agitation during or about the time of coition, and instances are cited in which females have acknowledged that they had been frightened at this particular juncture. Then again, it has been ascribed to malformations from disease or otherwise of the Fallopian tubes, by which the calibre of those tubes had been lessened, not allowing the impregnated ovum to reach the cavity of the uterus through its natural channel.

These theories, however plausible, cannot be reconciled satisfactorily until the physiological mechanism of conception is positively ascertained. The most important questions to be decided are first to determine positively and undoubtedly the true nature of the case, and then, in the second place, to decide upon the best means calculated to relieve the patient. It certainly must be exceedingly difficult, if not impossible, to determine beyond a doubt during the first two months of gestation. The uterus up to this period is sufficiently enlarged to leave you in doubt, and the fetal sac is not large enough to be felt distinctly. Hence, to make out a correct diagnosis, your examinations must necessarily be deferred until the fetal sac can be felt distinctly in the iliac fossa, at the same time to satisfy yourself that the uterus is in its proper place, not correspondingly enlarged. The period at which we can expect to deter-

mine with any degree of precision must, therefore, extend beyond the second month of gestation. Indeed, probably three months is the shortest period, and then it would require a very well-developed fetus to be felt with any degree of accuracy.

When, however, we have decided that we have unmistakably a case of this kind, the question at once suggests itself, What shall be done? We have been taught by the old writers to treat all such patients as we would threatened abortions and premature labor. If the cyst bursts and the patient becomes collapsed, then we are advised to use stimulants and all the means necessary to sustain, soothe, and revive the patient. When reaction is established, then we are advised to use all the means within reach to combat inflammation and its consequences.

If the patient should survive, then we have reached a point quite as critical as before, if not even more so. Both physician and patient are kept in a continued state of suspense and alarm. Whether the life of the fetus has been destroyed by some natural cause, and the fetal mass has become encysted, or whether the liquor amnii has been withdrawn; the passage of strong currents of electricity, or the injection into the fetal sac of strong narcotics, thereby destroying the life of the fetus, it matters not, for the indications are the same. Shall we now 'stack arms' and quietly await results, depending upon and trusting to the uncertainties of the *vis medica-trix naturæ*? The long train of fearful consequences, the great anxiety of patient, family, and friends, directly appeal in agonizing tones to medical skill for succor and relief. Happily, however, a new era has dawned upon the science of medicine. We are no longer compelled to depend upon the great uncertainties of therapeutical agents, for the whole subject is very properly drifting into the hands of the surgeon, and upon his skill we shall ere long rely for safety and relief.

After we have ascertained satisfactorily and beyond a doubt that we have a case of vicarious gestation, then *elytrotomy* or *gastrotomy* promises the most favorable results. Enucleating the contents of the sac, as recommended and practised by T. Gaillard Thomas, seems to be a very plausible operation, yet, according to his report, it is not unattended with dangerous consequences.

For all practical purposes and for all stages of the affection, from the bursting of the smallest fetal sac to the extreme limit of gestation, why not at once perform the operation of *gastrotomy*, seize, ligate, and remove the ruptured sac or the fetal mass, as the case may be, and thus relieve the patient of all immediate as well as remote dangers incident to such unnatural formations? The consequences

cannot certainly be more hazardous than those resulting from the removal of ovarian cysts, when we consider the extensive adhesions and complications so frequently encountered by ovariologists in the removal of those immense tumors."

At the discussion which ensued Dr. REAMY remarked:

"This specimen is a typical one of tubal pregnancy in the ovarian end of the tube. In progress of growth the lower tube-wall has become firmly attached to the summit of the ovary. The rupture occurred, as we see, at the upper wall of the tube. The distention of the tube, which was trying to make room for the growing fetus, manifestly was prevented by the unyielding ovary below. Hence I have no doubt that in this instance the rupture occurred from this cause earlier than it otherwise would. The specimen also illustrates beautifully the hypertrophy of the muscular structure of the tube always present under such circumstances. Here, at the point of rupture, it can plainly be seen even by the unaided eye that the growing ovum has protruded through the muscular coat, and finally, when the rupture occurred, the broken wall consisted only of the mucous and peritoneal coats of the tube. These are common and well-known facts, but so clearly and beautifully illustrated in this fresh specimen that I call your attention to them, since such an opportunity of demonstration does not every day fall to our lot.

As to the symptoms given in the history of the case, they agree very well with those recognized by modern authors. The abdominal pain and semi-sanguineous discharge (especially the latter) is regarded as a very important diagnostic symptom by Parry. It is easy, after the pathological specimens are before us, to see the clear relations between the symptoms which existed during life and the facts—much easier, I confess, than during the progress of the case. My friends who had charge of the patient will therefore not regard what I now say as uttered in the spirit of criticism.

It does not seem, however, that, with a history of suppressed menses for two months in a married woman of child-bearing age—with attack of uterine pain—and occasional bloody, muco-serous discharge—the sudden and profound symptoms supervening as in this case, would point pretty certainly to the rupture of a sac and discharge of its contents into the peritoneal cavity.

This diagnosis having been made, I will be pardoned for further saying—since the woman lived several hours after the violent symptoms signalling the accident—the case would have been an admirable one for surgical interference, abdominal section, sponging out the cavity, tying the bleeding vessels, etc. Death in such cases, the pregnancy being tubal, and having gone beyond a month, may be considered almost inevitable; and gastrotomy could scarcely increase the hazard, but might bring rescue."

DR. TRUSH.—"This highly interesting case affords another illustration of the great dangers of tubal pregnancy; so grave is the prognosis in this form of extrauterine gestation that, out of a total of one hundred cases collected by Puech, but three recoveries are reported. With a mortality rate like this, under symptomatic

treatment before me, I certainly concur in the opinion expressed by the author of the report, and reiterated by the previous speaker, viz. that gastrotomy is *per se* the remedial measure to be employed whenever in any case of tubal pregnancy symptoms of rupture of the sac present themselves, *provided, at all times, that a reasonably certain diagnosis of this condition is possible.* But can such a diagnosis generally be made? Judging from the past record of these cases, I am led to infer that physicians have not hitherto succeeded in arriving at satisfactory conclusions in this matter of diagnosis, otherwise, doubtless, they would have performed the operation in question—gastrotomy in early rupture of tubal cysts—long ago. The fact is, the entire assemblage of symptoms of tubal pregnancy is quite equivocal. Take the present case for example. Was there anything in the phenomena, from first to last, sufficiently characteristic to have enabled the attending physicians, or that would enable any other physician under similar circumstances, to recognize the real nature of the case? How unreliable, in the first place, are the symptoms of early pregnancy! How many morbid conditions of the generative organs of the female furnish similar symptoms! To such a degree is this the case, that no one pretends to diagnosticate pregnancy of any kind during the first two months of gestation. Next, the pathological phenomena, regarded as peculiar to extrauterine, and especially tubal pregnancy—the pain and the sanguineous flow from the uterus—are they not equally uncertain in their significance? Pain in one or the other iliac fossa is of such frequent occurrence with a variety of the more common morbid states of the uterus and ovaries that it rarely even suggests the idea of extrauterine pregnancy, and the uterine hemorrhage, the most important of the signs of extrauterine tubal pregnancy, is the habitual menstrual phenomenon, and when irregular in its appearance, signalizes, in the majority of instances, even in conjunction with pain, nothing more than menstrual derangements, or at least some morbid condition of the generative organs other than extrauterine pregnancy. If exceptionally, under these circumstances, a bi-manual exploration is instituted, it can at the most only disclose the presence of an extrauterine swelling, together with a slight enlargement of the uterus; but a congested ovary and uterus, so often encountered in catamenial disorders, will impart similar impressions. Finally, the symptoms of rupture of the cyst of an extrauterine pregnancy are but the phenomena witnessed in the sudden formation of a pelvic hemocele, yet rupture of such cysts is merely one out of several of the causes of the pelvic hemocele. Thus it is seen that the diagnosis of an extrauterine pregnancy in its early weeks, before as well as after rupture of the cyst, is beset with almost insuperable difficulties. It is not unreasonable, therefore, to predict that the symptomatic course of treatment of such cases as the one presented to-night will continue to form the rule, and the operative procedure possibly a very rare exception."

DR. HENDERSON, concluding the discussion, said that his diagnosis of the case was not made during life. Not until he saw the

evidences afforded by the autopsy was he positive that it was a case of extrauterine fetation, nor did he think that a positive diagnosis could have been made ante-mortem at this early stage of gestation. Gastrotomy would certainly have been the proper procedure in the case.

DR. UNDERHILL read a paper entitled :

THE FEMALE GENERATIVE ORGANS IN THEIR MEDICO-LEGAL RELATIONS,¹

in which he treated of early viability, protracted gestation, earliest and latest ages at which women are capable of child-bearing, superfetation, privileges of pregnancy, and multiple births.

DR. REAMY. —“The causes of labor are not known. Two hundred and seventy-six days from the day of insemination, labor usually occurs. Why, no man knows. I will not detain the Society with citation of authors as to opinions familiar to all. I have known cases occurring in my own practice, where from the circumstances attending them, there could be no reasonable doubt as to the time of insemination, the date of labor being postponed from 10 to 16 days. In one case, 22 days—gestation lasting 298 days. I have, when a boy, marked the time of gestation in the mare, and known it to extend 30 to 36 days beyond the ordinary period, agreeing with the well-known cases reported by English breeders.

I dismiss the subject, therefore, by saying that I do not believe a medical witness ought to testify in a case where a woman's virtue is called in question, that a gestation may not be protracted to 300 or even 315 days.

As to the subject of superfetation, which is considered in the essay, I may state that there is to my mind no physiological or other reason why it may not occur. As a rule, ovulation ceases when pregnancy occurs, but there are exceptions to this rule. There is no mechanical barrier to a second conception occurring in the earlier months of gestation. In my own practice I had a case where ten and one-half days intervened between the births of twins.”

DR. TEMPLE, referring to the subject of early viability, related a case of which he was personally cognizant, that of a clergyman, whose wife gave birth to a viable child six months and twelve days after marriage. A church trial resulted in his acquittal, an appeal was made from the decision, and in the highest tribunal of the church, after an exhaustive examination and learned discussion of the subject, the original decision was sustained.

DR. C. O. WRIGHT said that he thought, in the discussion of the subject presented by the essayist, we should confine ourselves to our own practical experience, and have less theory. The paper, full and explicit as it was, needed more positive facts, and although he would not criticise it, he could not help complimenting the essayist for the able manner in which he had treated the various subjects.

¹ Vide ORIGINAL COMMUNICATIONS, this JOURNAL, January, 1879.

In regard to the earliest age at which a woman may give birth to a child, he would say that during his stay in Siam, he had seen a mother at 10 years of age, and a grandmother at 21, and was informed that cases occurred there, or at least one case was positive, where the mother had not reached her tenth year. In that hot climate women are developed very young, and from his personal observation he could state that it was no unusual thing in Siam, as well as in southern China, to find fully developed women at 8 years. The oldest age at which he had known a woman to bear a child was 48 years.

He claimed that about thirty days over the period of nine months was the longest or average time a woman could carry a child, notwithstanding the high authority for a longer time, attributing it to a mistake in judgment, as per following case: "Was engaged to attend Mrs. F. When seven months pregnant, according to her statement, was sent for in a hurry as she was flooding severely. Saw her, administered remedies, and leaving directions promised to call again. A slight discharge continued for three or four days, after which time my suspicions were aroused that she might not be pregnant, and upon examination such proved to be the fact. It was impossible to disabuse her mind, her nurse was engaged, clothes made, and I *must* be mistaken. Nine months and two weeks from that time she was delivered of a son.

Now had not proof positive existed when first called to see her that she was not pregnant, this might have been pronounced a case of protracted gestation. And so I think are many cases which are claimed to have passed the normal period."

DR. MILES stated that the earliest age at which he had known a child to be born and continue to live was six and a half months. The case occurred in his own practice and no doubt was entertained by him concerning the time which pregnancy had existed. The child is a female, weighed at birth three pounds, and now at the age of ten months weighs above twenty.

He had never attended a case of accouchement in a woman over 44, but he knew a case, the mother of a medical gentleman, in which the lady was 58 years old at the time of her last confinement.

DR. HENDERSON remarked that the paper was so complete and exhaustive that he did not feel disposed to add anything further than merely recite the history of a case occurring in his practice some years since, and which had some bearing upon that branch of the subject relating to prolonged gestation. Dr. H. prefaced his remarks by expressing his delicacy in giving the history of a case which, according to the generally received opinions of the profession, might seem somewhat remarkable.

CASE OF GESTATION PROLONGED TO FIFTEEN MONTHS.

He was called to see a lady in the latter part of January, 1860. She was about 35 years of age, was the mother of several children, and quite healthy. Her previous confinements were in no particular

remarkable. She had menstruated regularly until the previous December, which period she missed, making the flow in the early part of November the last previous to the time he was called. She had a slight hemorrhage from the uterus, associated with more or less pain in the back and lower part of the abdomen. The womb upon examination was found enlarged to about the size that we would expect to find it at the period of two or two and a half months' gestation. The patient expressed herself well satisfied that she was pregnant, and feared very much that she would have an abortion. He prescribed sulph. morphia and enjoined rest, which soon relieved her.

She continued to develop until about the proper time, when she quickened, which led her to suppose that she would be delivered about the middle of August following. He said that he saw the patient frequently from the time he had been called, and believed from her appearance that she would be confined at about the anticipated time. She, however, continued for a month or more over the expected period, and becoming uneasy again, sent for him. He made an examination and found the uterus to all appearance at the full period of gestation, but the os was not in the least dilated.

The patient said to him that she had felt the movement of the child from the period of quickening up to that time, and that the motion, so far as she could remember, was just the same as in her former pregnancies. She continued in this condition until about the first of November, at which time he made another examination and found the uterus apparently larger, but in every other respect about the same as it was at the last examination.

He now left the patient in the care of another physician, as he expected to be absent for a few months. About the middle of February, 1861, he was sent for again, as both patient and physician were becoming quite uneasy. Before leaving the city, he consulted Prof. M. B. Wright concerning the case, who expressed himself quite hopefully as to the final result, saying that he had seen cases of prolonged gestation, but that they had all terminated favorably, although he admitted that he had never seen one quite so prolonged as this one seemed to be.

Dr. H. again visited his patient in consultation with the physician with whom he had left the case. Found the patient apparently in good health, but with the abdomen enormously distended. She had not had labor pains up to this time, which was the 15th of February, 1861, making in all fifteen months since she supposed herself to be pregnant. The os was considerably dilated and dilat-

able. A suspensory bandage was improvised and the weight of the abdomen suspended from her shoulders.

In a day or two, labor came on, and after a tedious and painful labor, they were compelled to deliver her with the forceps.

The child, weighing *sixteen pounds and a half*, was still-born, having evidently died during the labor, as was clearly proven from the fact that the movements of the child were distinctly felt up to within three hours of its delivery.

Dr. H. then said that, although he had given a faithful history of the case, yet he could not help feeling that there would be in the minds of many, if not all, who heard his remarks, serious apprehensions after all that there must have been some mistake about the case. He, however, felt it to be his duty to narrate the circumstances, notwithstanding the serious doubts to which it might give rise.

DR. KEARNS was of opinion that in these cases of marvellously protracted gestation we should be very careful about accepting the statements of interested women, when opposed by strong physiological testimony. This he illustrated by reference to a case of pseudocyesis which he witnessed in his own practice during last summer. The lady had not menstruated for ten months, declared she had, six months previously to consulting the doctor, plainly felt quickening, that the movements of the child had frequently been felt since then, and she could not understand why labor should be so long delayed. Examination showed conclusively that she was not at all enceinte. Now, had conception actually taken place in this case after the period when she thought she had experienced quickening, and so long after suppression of the menses, it would have been heralded as a remarkable example of protracted gestation.

DR. J. J. QUINN:—"In determining the duration of pregnancy, whether it is terminated prematurely or extended beyond the usual period of utero-gestation, a serious difficulty is almost invariably encountered—the difficulty of ascertaining with any degree of certainty the date of conception. Women sometimes menstruate once, twice, occasionally even regularly, after impregnation, and hence a mistake may readily occur in reckoning the period of gestation. Perhaps the most reliable data for establishing the period, are presented in cases in which pregnancy has followed a single coition. And here again a difficulty may arise as to the exact date of conception, since it is now known that a considerable time may elapse before the semen comes in contact with the ovum.

In considering the question of the shortest period of gestation at which a viable child can be born, it is not only necessary to ascertain the time of conception, but also what is meant by the term viability. On the latter point authors differ. While some writers regard viability possible only in mature children or infants born at full term, others take a more contracted view, and consider prema-

ture children viable if they are capable of taking on respiratory life, the circulatory functions being established, and the physical organization, except as to size, being perfect. Devergie defines viability: 'an aptitude for extrauterine life, characterized by the *maturity* of the infant, the good conformation of the principal organs of the economy, and the healthy state of those organs at the epoch of birth.' That 'the infant should be born at term,' is mentioned by Billard as an indispensable condition of viability. In his published lectures, Dr. T. S. Traill, Professor of Medical Jurisprudence in the University of Edinburgh, says a viable child is recognized by the perfection of its organs, the position of the mesial line, the appearance of its nails and skin, the cry of the infant, and its capability of sucking.' Without essaying a definition, Dr. William A. Guy regards a child viable if it 'has survived its birth so long as to prove that there was no physical obstacle to its attaining the adult age.' He believes, if a child has survived 'a week or ten days, it is quite *possible* that a child of the same age may be reared to manhood;' for if it survive that long, 'it will have overcome all obstacles to the establishment of the respiratory and circulating functions, and, provided its frame be free from disease and well formed in all its parts, may continue to live.' Traill says that in Scotland the viability of a child is determined by its crying, and in England by its respiration.

If the capacity of establishing respiratory life alone is to be regarded as sufficient evidence of viability, cases are recorded in which the duration of pregnancy was less than 158 days, the shortest period of gestation for a viable child cited in the paper. In the appendix to the American edition of Stewart's Billard on Infants, Dr. Francis gives an instance of this character. The case was one of a male fetus, born in the twentieth week of gestation; it measured 10 inches in length; weighed one pound six drachms, and lived one hour. The doctor says, in connection with the case, 'Too many circumstances conspired to render the age of the fetus doubtful: it was the product of a first conception, and the parties were above suspicion.' Under the head of a 'Case of a Child born between the fourth and fifth Month, and Brought up,' Dr. Rodman, of Paisley, Scotland, reports an instance of a male infant, born on the 12th of April, 1815, at the supposed period of 133 days. The length of the child was estimated at birth to be 11 inches: at the age of 3 weeks it measured 13 inches in length, and weighed one pound thirteen ounces; it lived one year and nine months. The case was also seen and the facts attested by Dr. White of Paisley, a reputable physician of nearly 40 years' practice. In two papers on the subject, one published in the eleventh volume of the *Edinburgh Medical and Surgical Journal*, p. 455, and the other in the twelfth volume of the same periodical, p. 251, Dr. Rodman describes the mother, who had previously born 5 children, as 'more cautious in her decisions, accurate in her observations and steady in her deportment than what is usually met with in society; while the appearances of the infant were sufficient proofs to any one experienced in the practice

of midwifery.' He states that she was tall, robust, and healthy; 'never subject to irregularities which derange calculations' of the duration of pregnancy; 'that her knowledge of the time of her former gestations was particularly accurate;' and that 5 months after the birth of the child she 'still does not hesitate to affirm that the period of gestation was rather within the 19 weeks.' It is proper to remark that Dr. James Hamilton, in his evidence in the celebrated Jardine case, while bearing testimony to the respectability as a practitioner of Dr. Rodman, who had been his student, believed the mother was mistaken in her calculation, and that the child was a dwarf. He seems to have based his doubts on the length and weight of the infant, which were greater than the average of five months' children, and correspond with the extreme weight and measurement of children at period given in statistical tables. In his second paper, Dr. Rodman had met these objections with the statement, that in his first report he discarded the conjectures of fancy and discussion of theory, and attempted to narrate the facts with simplicity; 'that several authors who give the size and weight of the fetus at different ages are inconsistent in their statements:' that the length and especially the weight of full-term children are variable; that children in utero at the same period of gestation also differ in dimensions; and that, as physicians are not generally consulted in pregnancy until gestation is more or less advanced, the age at which measurements are usually made must be derived from the mother's history, her assertions and her former habits, the same as was done in this case. According to Beck, Dr. Hamilton had previously taught in his lectures that he considered 'all accounts of children living to maturity, who are brought forth at the fifth or six month, fabulous.' He, however, admits that in this instance, 'the estimate of the child's age, formed by the mother, was at least as likely to be correct as such estimates can ever be.' The view of Dr. Hamilton in regard to the age is the opinion of a medical gentleman who had never seen the infant, against that of the attending accoucheur who watched the child and described its condition from week to week until it reached the age of 4 months, when its health and excretory functions were fully established.

In addition to the case at 20 weeks, by Dr. Francis, already mentioned, he also gives an instance of a child born in the 23d week which was still living at the age of seven years. Dr. Charles A. Lee, in his edition of Grey's Forensic Medicine, reports a case occurring in his own practice where a fetus of 26 weeks survived; and he adds that 'examples of this kind, and even of an earlier period, would probably be more frequent, were the child immediately wrapped in warm cotton, and sustenance of a proper kind and quantity administered at suitable intervals.' In an essay by Dr. Granville, published in the London *Medical Gazette*, of Dec. 12th, 1829 (p. 339), reference is made to the case of a woman who was delivered of a child, which lived to maturity, six months after a previous labor. Prof. Broussais witnessed the labor and narrates

the case in his essay on Medical Education. Was the fetus of more than $5\frac{1}{2}$ months' gestation? Dr. Granville thinks not.

A case is reported by d'Outrepoint of a male infant at 6 months, which is not now doubted even by sceptical writers on the subject of early viability. The fetus weighed $1\frac{1}{2}$ pounds, and was $13\frac{1}{2}$ inches in length. In commenting upon the case, Guy pronounces it 'an unequivocal instance' of the rearing of a six months' child. He says further, that 'the evidence is as complete as it is possible to be in any case of the kind. It is complete, both as derived from the date of the mother's impregnation, and as drawn from the structure and history of the child.' At the age of 11 years, the child was as large as a boy of 7 or 8, and had just begun to read and write.

Besides the cases furnished by Rodman and d'Outrepoint, Dr. Guy tabulates 4 others at 5 and 2 at 6 months' gestation, in which the lengths at birth ranged from $11\frac{1}{2}$ to $12\frac{3}{4}$ inches; the weight from 1 pound 5 ounces to 2 pounds; and the duration of extrauterine life from $3\frac{1}{2}$ hours to 17 years. They were reported by Belloc, Fleischmann, Christison, Thompson, Bueholz, and Kopp.

It is well enough to be careful in accepting the reported age of premature children that prove to be viable; but is there not danger of scepticism based upon preconceived views, coming to unjust conclusions, and inflicting irreparable injury upon individual character? The question of the shortest period of gestation consistent with the viability of the child is a very important one, and one by no means settled in the profession. In investigating it, the physician should not too hastily discard the testimony of intelligent and truthful mothers, especially when there is no motive for fraud. On Feb. 24th, 1869, I attended a lady in premature labor who firmly believed she was only 5 months in gestation. It was a second pregnancy, the first labor having taken place in May, 1867. After two subsequent deliveries at full term, one on the last of October, 1870, and the other in February, 1874, she was still so confident that she was very little, if any, over 5 months advanced, that she would admit no supposition to the contrary. The suggestion that the fetus might possibly have been 6 months old was modestly but firmly resisted by the mother, who is an intelligent, educated, and refined lady, with no possible motive for deception, and not likely to be deceived if her mode of reckoning was correct. The child was exceedingly feeble in its motions, apparently not over 6 or 8 inches in length, and proportionately small in body and head, with a soft down covering the latter, and with nails not fully developed. In all other respects it was perfectly formed. It was never dressed, but kept wrapped in cotton; swallowed at first with difficulty and only by drops; was fed on strained cracker water and diluted milk, well sweetened; its principal excretory functions were soon established; and it lived 8 days. This, according to the definition of some writers, might be regarded as a viable child.

In September, 1852, I attended another woman at what I then supposed to be about the 6th month of utero-gestation, though the fetus

was small for even that age. It was a first pregnancy, but the mother had been long enough married, even if the development of the fetus had not borne evidence of its immaturity, to render deception unnecessary. Except a barelip, the child was well-formed; it lived one hour.

The same difficulty is experienced in measuring the length of protracted gestation that is met with in determining the duration of pregnancy in premature deliveries, that is, fixing the time of conception. Although it is now generally conceded that the period of gestation may exceed 280 days, there is a difference of opinion as to the length of time it may be extended. If it be admitted that from insufficient nutriment for the child in utero, or other cause, the time can be extended at all, it is difficult to fix a limit beyond which protraction is impossible. Cases have occurred in which the date of conception, or at least of the deposit of semen, has been definitely known, and which therefore afforded more favorable opportunities for investigation than when the date of conception is based upon the disappearance of the catamenia, or the impressions of the mother. In the *London Medical Gazette* of Dec. 12th, 1829, Dr. Granville relates from Desormeaux (quoted also in Dewees' Midwifery) a case of this kind. After all means adopted to restore the mental faculties of an insane woman had failed, her physician recommended pregnancy. With this view the husband was permitted to have intercourse with her not oftener than once in three months. The object in thus limiting the visits was to prevent further sexual intercourse after impregnation had taken place. The time of the visits was carefully noted by the physicians; intercourse was absolutely prohibited when signs of pregnancy appeared; the patient was closely watched by the attendant, and was besides, a moral, religious, and reliable woman. The lady gave birth to a small female child at $9\frac{1}{2}$ months after one of the visits. A somewhat similar case is reported by Dewees. The husband, who was obliged to absent himself from home, had a single clandestine meeting with his wife who was delivered of a child in 9 months and 13 days afterwards. The doctor not only expresses himself as almost satisfied that the period in this instance was 298 days, but adds he has every evidence short of absolute proof that, in four cases attended by him, the period of gestation was 10 calendar months, allowing 10 or 12 days after the last menstrual period. He also cites another case where the slightest suspicion of deception did not exist, in which a lady was not delivered for 10 months after her husband's departure for Europe. Cases at 10 months have likewise been reported by Drs. McLane and Lee, of New York, and others. Ryan quotes authorities for protracted pregnancies to the 11th, 12th, and 14th month.

On the 3d of August last, I delivered a patient in her 5th labor, of a medium-sized female child, 310 days after the cessation of her last catamenia. She menstruated but once after her previous delivery and, as had been her custom between her other pregnancies, noted down the time, so that there was no error in the date. Her former

children had invariably been born in 9 months and from 7 to 14 days after her last menstruation. She always enjoyed good health, was as well during this as any previous pregnancy, and performed less household duties. At the time of delivery, the umbilical cord was partially twisted. The child was very feeble, and until the present time has wasted away very much. The marasmus, however, now seems lessening from day to day.

In addition to what has been said in the essay and during the discussion on the subject of the greatest age at which a woman might become pregnant, a case may be mentioned which occurred in September, 1825, in the practice of Dr. Vanderveer, of Long Island, and which was communicated by that gentleman to Dr. Francis. The particulars were furnished in the form of a letter which Dr. Lee, deeming the case 'worthy of permanent record,' gives entire in his edition of Guy's Forensic Medicine, premising 'that the professional skill and probity of Dr. Vanderveer place the fidelity of the representation beyond all doubt.' The patient was American by birth, of Low Dutch extraction; was married at the age of 21 years; was the wife of a laboring man, and obliged to work hard; and was 61 *years and 10 months old* when her last child was prematurely born. She had previous to this time 4 miscarriages and 6 full-term children, the last at the age of 44 years; had been regular in her menses when not pregnant, until she was 47 years old; had menstruated only 3 or 4 times between that and the age of 55 or 56; after that age had menstruated irregularly until she was about 60; and after this had become regular every 6 or 7 weeks. In February, May, July, and September, 1825, she had severe attacks of uterine hemorrhage, the last of which began two days before the birth of this child, which was a well-formed female, weighed about 6 pounds, and lived half an hour. In the opinion of the doctor, it was between a 6 and 7 months' fetus. A copious secretion of milk followed delivery, and the patient had a good recovery. When informed by the doctor of her condition, she stoutly denied being pregnant, and attributed her trouble to the periodical bleeding to which she had been subject."

Stated Meeting, December 12, 1878.

DR. W. W. HENDERSON *in the Chair.*

DR. C. O. WRIGHT gave the notes of

A CASE OF ANOMALOUS LABOR.

"On Nov. 21st, 1878, was called to a case of labor about 7 P.M., found the first stage progressing regularly, and decided to remain with the case. At 2 o'clock in the morning, found the os fully dilated and the vertex presenting, but all pains ended. Not deeming it necessary under the circumstances to interfere, and at the request of the patient went to bed. At 7 o'clock in the

morning, there having been no return of the pains, went home to breakfast (it being but a short distance off) leaving directions that the moment any change was felt to summon me. Visited her repeatedly during the day, and finding no change in the condition of affairs, decided to let Nature take its course, particularly as the patient seemed contented and preferred waiting.

On the evening of the 25th, four days subsequently, was summoned to case; found prior to arrival she had had but one pain; os still dilated; vertex presenting; bag of waters intact; decided to wait half an hour; second stage commenced, and with four or five expulsive efforts she was delivered of a living child.

Has any of the members had a similar experience? And what criticism on the management?

DR. PALMER remarked that he had had a similar experience in one instance, wherein pains ceased after rupture of the membranes and complete dilatation, labor not returning for a whole week.

DR. MILES said that, in one instance, a case of painless labor had come under his care, but dilatation ceased and did not resume for nearly a fortnight, when the lady gave birth to twins.

DR. TRUSH inquired of Dr. Palmer whether he had ever seen ill-effects result after rupture of the membranes where labor was permitted to be delayed—would there not be danger of septic infection from decomposing liquor amnii?

DR. PALMER thought the danger of septic infection would be very slight and that, upon the whole, it would be better to leave these cases to Nature, unless there arise some other special cause demanding interference.

DR. CARRICK expressed a preference for completing labor in such anomalous cases. He would use the forceps and thus relieve both patient and doctor of suspense.

DR. MILES remarked that many physicians consider it their duty to remain near by after complete dilatation of the uterus. Should the obstetrician absent himself, and during his absence the child be born and perish by suffocation or otherwise, such unfortunate occurrence might give rise to a suit for pecuniary damages. By some it may be regarded as malpractice, and suits for damages have been instituted under precisely these circumstances. Yet it does not seem reasonable or proper to expect that, when labor ceases after complete dilatation, the accoucheur should remain an indefinite number of hours or days for the termination of the case. His duties to other patients will not permit this, and yet, should labor suddenly return and any accident happen to the mother or child during his absence, it is impossible to predict with any near approach to certainty what might be the verdict of the court if he were charged with malpractice.

DR. REAMY would not interfere in such a case as that related by Dr. Wright, further than to endeavor to excite pains by pressure, friction, etc. He would never, without very special indication,

empty a uterus by forceps or other means unless there be pain, for he would fear hemorrhage resulting from non-contraction of the womb.

DR. REAMY showed a specimen of a

CERVIX REMOVED BY THE FUNNEL-SHAPED EXCISION FOR
EPITHELIOMA,

the incisions extending to the os internum.

The operation had been done with scissors. The specimen showed the diseased external end of the cervix and whole neck. The uterine extremity was funnelled out by the scissors, presenting a cone-shape and exhibited sound tissue. It made little difference as to whether all such diseased tissue was removed, since the upper portion of the vaginal wall was thoroughly infiltrated. The parts had been scraped out and chromic acid in full strength applied to the whole surfaces. Patient doing well.

Stated Meeting, January, 9, 1879.

The President, DR. J. J. QUINN, in the Chair.

Prof. EDWARD W. JENKS, M.D., an honorary member of the Society, read a paper entitled

PERINEORRHAPHY, WITH SPECIAL REFERENCE TO ITS BENEFITS IN
SLIGHT LACERATIONS, AND A DESCRIPTION OF A NEW MODE OF
OPERATING.¹

After Dr. Jenks had concluded, DR. PALMER expressed his pleasure in listening to so interesting and instructive a paper. He entirely agreed with Prof. Jenks as to the frequency of lacerations of the perineum. One has but to watch for the accident to become convinced of this matter. The perineum is not unfrequently ruptured in skilful hands, how much more often when the attendant is ignorant and careless. The perineum ought to be carefully examined by touch, the two fingers, one in vagina and other in the rectum; or, by inspection after every delivery. The early and full repair depends upon an early recognition of the accident.

He had had abundant opportunity to see the imperfect repair, the cicatrices, the secondary effects of the ruptures, as prolapse of vaginal walls, displacements of the uterus, among the poorer classes in his dispensary practice, and had been surprised, not only at the frequency, but the importance of the rupture as the original factor in many pelvic troubles.

As to the order of mechanism of displacement of the pelvic viscera, he thought, with the author of the paper, that first there was

¹ See ORIGINAL COMMUNICATIONS in this number.

the vaginal subinvolution, then prolapse of the posterior vaginal wall, then, in turn, and in consequence of this, came the prolapse of the anterior vaginal wall, and finally uterine displacement.

A rupture of the perineum to any considerable extent, as second degree, is very seldom indeed completely repaired by Nature, even aided though she may be by favorable position, prolonging of dorsal decubitus, cleanliness, and vaginal injections. These, as a rule, are insufficient, and, of course, the parts are left with an impaired integrity and lack of supporting power. Exceptions to this rule are seen. He remembers an extensive laceration to within the sphincter, which closed the second day by primary adhesion, and left the perineum as perfect as before. The reasons for this rule are obvious: the injury to soft tissues by contusions and pressure (hence we find these livid, greatly swollen, and edematous); the irregularity of the tear, and finally the opposing influences of the perineal muscles.

His rule, mostly, was to close up the laceration immediately, or within a few hours. A little delay is advantageous when the circulation of the parts is very bad. Ragged tissue is dissected away and the parts brought together by silk or catgut, passed through the ordinary perineal needle. Results are generally satisfactory.

In the secondary operations, he makes a denuded surface, triangular in shape, the size of which depends upon the extent of the laceration, and whether the rupture is complicated with rectocele. In this last condition, the pared surface is either triangular, with the apex high up the posterior vaginal wall, or somewhat pentagonal, extended also in some cases nearly to the cervix. Especially beneficial is this last method in cases of procidentia, the result of rupture of the perineum and great relaxation of the vaginal walls. Usually in this condition it is necessary to operate first by narrowing the anterior vaginal wall. He prefers the *trowel*-shaped denudation. Has used silk, catgut, and silver wire as vaginal sutures. Catgut quickly unites, and disintegrates before union takes place. Silver wire is more difficult to remove, and more painful to patient. Silk is preferred, and in some instances he has permitted the sutures to remain in the vagina without any ill-effect. Where a long triangular or pentagonal surface is pared on the posterior vaginal wall, he sutures the vagina from the apex to the base of the triangle or pentagon, bringing the opposite surfaces in close union, preventing the pocketing, often seen just within a thin, narrow, and weak perineum. Thus a long and strong perineum may be secured. The base of the perineum is also secured by stout silver wire sutures, passed from without through the integument into the vagino-rectal septum, by the perineal needle.

When the laceration extends through the sphincter, the repair of the bowel after Emmet should be performed at the same time that the perineum is reconstructed.

Dr. THAD. A. REAMY stated that he had operated by Prof. Jenks' method of denuding, and found it admirable. It secures speed, efficiency, and avoids blood-loss. In bad cases associated with

rectocele, he is in the habit of denuding up nearly to the cervico-vaginal juncture, tearing the mucous membrane off in these cases by using the scissors precisely in same manner as Thomas. Glove-stretcher is used in another operation. By this method, he is able to denude deeper, removing sub-mucous tissue as well. This is desirable, for it results in more extensive and firmer cicatricial tissue, and better contraction of the vagina. Dr. R. never now uses the quills. The silver sutures need only to be properly twisted in order that the parts be securely held in position. The circulation is better when the quills are not used, the sutures more easily removed, and so far as the operation is concerned, the parts can be more easily brought together without the quills. He uses small size No. 28, as made by Mr. Autenrieth of this city; it is sufficiently strong, and is almost as soft and pliable as silk.

In recent cases, the speaker prefers operating at once, not waiting a few hours. At the early stage, the sensibility of the parts is so obtunded that scarcely any pain attends the operation. He also finds that the patient consents to the operation at this time more willingly than a few hours afterward. He would not usually wait more than thirty minutes to an hour. He thanked Prof. Jenks for his paper and thinks his method one of the most important contributions to gynecology during the past year.

At the conclusion of the discussion of Prof. Jenks' paper, the Society went into an election of officers for 1879, which resulted in the choice of

J. W. UNDERHILL, M.D., *President*.

W. W. HENDERSON, M.D., *Vice-President*.

J. C. McMECHAN, M.D., *Secretary*.

E. B. STEVENS, M.D., *Corresponding Secretary*.

A. J. MILES, M.D., *Treasurer*.

REVIEWS.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY. By THOMAS ADDIS EMMET, M.D., Surgeon to the Woman's Hospital of the State of New York, etc., etc. With one hundred and thirty illustrations. Philadelphia: Henry C. Lea; 1879, pp. 835.

The author of this work has been known to the profession as having been connected with the Woman's Hospital in this city for the past twenty-five years. Many very important and valuable papers by him, on subjects pertaining to Gynecology, have appeared in the Medical Journals and in the Transactions of Medical Societies, and it is now eleven years since his work on Vesico-Va-

ginal and Recto-Vaginal Fistula was published. His reputation, both in this country and in Europe, has long been settled as a most careful, competent, painstaking, and conscientious observer, as a suggestive and original thinker, and as one of the ablest Surgical Gynecologists who have been developed from the impetus given to this branch of professional skill by the genius of the late Sir James Y. Simpson, of Edinburgh, the late unhappily blighted Baker Brown, of London, and the brilliant Marion Sims, of this city. In addition to this, it may be said that he has had opportunities for observation and experience, for unfettered and unrestrained experimentation, and for testing the value of the original and dazzling operations first proposed and performed by his illustrious predecessors, before referred to, and for devising new operations and discovering pathological causes never before suspected or described, which no man in the profession has ever before secured. We think also that the readers of this work will agree with us, after its careful perusal, that he has a rare capacity for discriminating analysis and generally for philosophical deduction, and the equally important quality of patient, honest, continued work. Fortunately he was also well prepared by a general hospital experience before he commenced his career as a specialist.

We will now examine the book in detail, as far as our limited time and space will permit.

Chapter I. is on the Relations of Climate, Education, and Social Condition to Development. We regard this as the most unsatisfactory and the only bad chapter in the whole book. We are convinced that it was written after the other portion of the book had been finished, and the brain had been exhausted by the persistent and continued work of years, and in the evening, after spending the day in the physical and moral atmosphere of diseased women. We quote the first sentences of the chapter:

"A thinking man, who has had opportunities of observation, cannot divest himself of the apprehension that the physical development of the women of our land is becoming deteriorated. If this be true, the causes should be quickly sought out and removed, or we must eventually become an enfeebled race, after the human stream which has given us vigor has ceased to flow into our country from other lands."

This is pessimism, as morbid and groundless as pessimism always is. The author then goes on to express the implied opinion that the American climate has an unfavorable influence upon longevity, nutrition, development, and generation. One sentence in the chapter can only be understood as expressing the idea that the "civilization and progress" in this country, as regards the artificial life of women, "is only consistent in a general disregard of all laws of health."

If by "American climate," Dr. Emmet means that of the United States, can it be possible that he believes that the climate of New England, the Middle, the Western, and the Southern States, each and all of them, has this pernicious influence upon women as regards

"longevity, nutrition, development, and generation"? Is there any evidence that the average duration of human life is less in this country than in any country in Europe? In no country is the supply of food so abundant and so cheap as here. Even in the agricultural districts of Great Britain, of France, and of Germany there are millions of poor laborers to whom meat is only a weekly luxury, while here with the same class the number who cannot have it with each meal in the day is very small. Defective nutrition, as a result of climate or of social conditions, we believe to be infinitely more rare than in any other country. When it is found, it is only in exceptional cases that it is not the result of disease in the individual.

As regards the influence of our climate on women as to "development and generation," it is sufficient to refer to one fact, which was demonstrated by our recent civil war. The average height of the soldiers of both the northern and southern armies was very considerably above that ever known in any armies of Europe. There have been picked regiments where the men were selected solely for their height, but with the exception of such regiments, the average height of our native regiments was fully one inch above that of the army of any nation in Europe.

If by climate our author means the climate of New York City, to which his medical observations have mainly been restricted, we are here again at issue with him. We think that it can easily be shown that there is no large city in the world so fortunate in its climate from the beginning to the end of the year as New York. It is certain that no one who has a personal knowledge of the climate of London, of Paris, of Berlin, of Vienna, of St. Petersburg, of Rome, of Florence, of Madrid, would ever think of comparing it with that of New York. We suppose the author uses the word climate as meaning the general state of the atmosphere as respects temperature, wind, and moisture. Taking the cities of this country, the climate of Boston is the one thing that good Bostonians never boast of, although we have sometimes thought that they find a kind of gratification in cursing it. Philadelphia suffers from greater extremes of cold in the winter and heat in the summer, while it lacks the cool, refreshing southern sea breezes which we so frequently have during the summer in New York. We do not think that any one would ever compare the climate of Chicago or of St. Louis with that of New York.

We have often heard such ill-considered opinions expressed by physicians, and echoed by intelligent men and women as regards the general deterioration of the health of women in this country and the influence of our climate in causing it; but we think it our duty to protest when an author, whose opinions on other subjects on which he writes command the highest respect, gives his sanction to such popular errors. We are happy to acknowledge that there are some truths, and some useful but not novel suggestions in this chapter, but which are equally applicable to women in other countries as to those in our own. We consider this chapter as the

blemish of the book, as neither in its literary quality nor its scientific value is it on a level with the rest of the volume. We hope that in future editions, which will surely be called for by the profession, it will be left out.

This ends our fault-finding; for the work as a whole we have only praise. It deserves and will receive the careful study of all who desire to keep on a level with the progress of Gynecology. It embodies a larger amount of carefully analyzed personal experience in a unique field for observation than any volume on Diseases of Women which has yet been published. Its great merit consists in this—coming as it does from a thoroughly honest, competent, and able specialist, who became a specialist only after an excellent training and experience as a general hospital physician and surgeon. The book is not one to be hastily glanced over, but will secure the critical study of Gynecologists. Not only its style, which is individual and somewhat peculiar, but the new facts which it brings out, its original suggestions, its numerous and important statistical tables, and, in some instances, its unexpected deductions, will compel attention, and will form the basis for a great deal of Gynecological study and literature in the future.

It is not a book from which its cream can be skimmed and offered to the readers of the *AMERICAN JOURNAL OF OBSTETRICS* in the form of an "Analytical Review." We must, therefore, simply call attention to its salient points and characteristic features as the limited space in the *JOURNAL* will permit, for we are sure that all its readers will never rest satisfied until they have examined it for themselves.

Two chapters are devoted to a description of "Instruments for Examinations" and "Surgical Instruments and Appliances." The catalogue of such instruments is very full; few, if any, which have been demonstrated to be of real value, being omitted, and excellent illustrations of thirty-one of these instruments are given.

In the following chapter, a form for a record of cases is given, the mode of examination is described, and the chief points for forming a diagnosis are mentioned. The truth of the last sentence, although somewhat inelegantly expressed, will be vouched for by every one who has had much experience in Gynecological consultations: "Many a poor woman has had to suffer from the carelessness of her physician in overlooking a latent cellulitis, and endured years of bad health, and often permanent sterility, from the disease being rekindled by the unskilful use of the probe or sound, and extending beyond the limits of the first attack."

We will also quote another sentence from this chapter, because it emphasizes a point which we often see disregarded in digital examinations. Referring to this, page 61, our author says: "It is all-essential to possess a knowledge of departures from a healthy standard, and to detect slight changes—it is equally important to realize the fact that the lighter the touch, the more thorough will be the appreciation of the sense." The sentences which follow this are very characteristic, both of his mode of expression and his modes of practice.

"The Cause of Disease, Reflex and Direct" is the theme of another chapter. It is full of suggestive ideas, but will leave the impression on some minds which jump at conclusions, that the pathology of the author is sometimes crude and ill-digested. Many will not fully appreciate the valuable ideas brought out in this chapter, until they have read other portions of the volume, when it will be better understood and more highly estimated. Our author is peculiarly one of whom a correct judgment cannot be made by isolated pages or by isolated chapters, for, like the Gospels, his work requires collation, when its harmony will be more apparent. Many will feel warranted in expressing their dissent to some of the pathological ideas in this chapter by an interrogation (?) or by the Scotch verdict of "not proven," but in the main they will be in harmony with the admirable and lucid table, "On the Causes of Disease in the Female Organs of Generation," page 79.

Three chapters are devoted to the discussion of General and Local Treatment. All who have to treat diseases of women will be glad to have so full an exposition of the principles which govern his practice, and we are sure all will read these chapters with profit. We hope they will be read critically, but we must say that in some details we do not anticipate that his views will be accepted or his practice imitated. We could point out several such, where we think the advice given would neither be helpful to patient or physician, but our author has made so many important contributions to our therapeutical resources in Gynecology, notably in the use of hot water-vaginal injections, that it would be an ungrateful task to refer in detail to what we believe to be errors of inference and mistakes in practice, particularly as we think it quite unnecessary to do this, as the probability is slight that in these few minor points they will be generally followed by Gynecologists. We cannot forbear expressing our warm assent to the close of the chapter on general treatment, which we quote in full.

"As the treatment of the diseases of the female organs of generation embraces, in some form, the whole field of the practice of medicine, it is not possible to do more than to offer general suggestions bearing on the more prominent features. For the successful treatment of these diseases, a more general and accurate knowledge is requisite than in any other branch of the profession, since through the sympathetic system, as we have already seen, reflex irritation and remote functional disturbances are the rule. The advocate for either general or local treatment exclusively, or he who neglects to give proper attention to both, does not possess sufficient practical knowledge to extend his usefulness beyond the range of an empiric. The successful physician or surgeon is eminently noted for his personal attention to details. The most profound knowledge adds but little to the success of practice if the details are not looked to, and many a brilliant operation has failed and even entailed disastrous results upon the patient, for want of this care in the after-treatment. The purpose of this chapter has been, and the object in view throughout the work will be, to im-

press the reader with the fact that success in the treatment of the diseases of women lies wholly in attention to minute details."

We will here remark parenthetically that the illustrations in the volume are very numerous and excellent, but it seems to us that Fig. 40, page 128, is faulty in its drawing, as, to make the illustration correspond with the text, the upper and lower outline of the uterus should be perceptibly larger than the middle uterus.

The chapter on Menstruation and Ovulation is one of the most important papers, in some respects, that has ever been written on these subjects. It contains twelve statistical tables, which must have cost an immense amount of labor to prepare, and which will be constantly referred to by future writers on these subjects.

The next chapter is on The Abnormal Changes in the Menstrual Flow, Amenorrhea, Menorrhagia, Dysmenorrhea, and Vicarious Menstruation.

Congenital Absence and Accidental Atresia of the Vagina; mode of operating for establishing the canal and evacuating retained menstrual blood, is the subject of the next chapter, and a most important and valuable paper it is.

Then follow chapters on Pelvic Hematocoele; Diseases of the Pelvic Tissue; Displacements of the Uterus; Etiology and Treatment of Uterine Versions; Pessaries; Etiology of Uterine Flexures, with six statistical tables showing the relations of flexures to marriage, celibacy, pregnancy, miscarriage, etc.; Treatment of Flexures of the Uterus; Procidencia or Prolapse of the Uterus; Laceration of the Perineum; Inversion of the Uterus; Sub-Involution of the Uterus; Laceration of the Cervix Uteri. It is universally conceded that to Dr. Emmet belongs the great credit of first describing this lesion and its pathological importance, and of devising a successful surgical procedure for its radical cure. Many points remain unsettled as regards its frequency, etiology, and necessity for surgical operations. As he has demonstrated in the past that he is an earnest seeker after the truth, and that he has had the honesty and moral courage to avow any changes which a larger experience and more thorough research bring about in his professional opinions and practice, we must express the conviction that some of the views expressed in this and the following chapter on the Diagnosis and Treatment of Lacerations of the Cervix Uteri will hereafter be essentially modified. As an example, we will instance the following sentence, with which the chapter ends. "Its importance cannot be exaggerated, since at least one-half of the ailments among those who have borne children are to be attributed to lacerations of the cervix."

Amputation of the Cervix Uteri. In this chapter our author expresses the opinion that this operation is never called for except for malignant disease. He also avows the belief that true elongation of the cervix does not exist. "What, never? *Hardly* ever." The late Dr. Charles A. Budd removed from the body of a maiden lady aged 41, who died of cholera in 1854, a uterus, whose cervix below the vaginal junction measured three and a half inches. There was no laceration of the cervix. This specimen was for

several years in the Museum of the New York Medical College, and we think it must now be in the Museum of the University Medical College.

The subjects of the chapters which follow are—

Cancer of the Uterus, Vagina, Rectum, and External Organs of Generation.

Description, Etiology, and Diagnosis of Fibrous Growths of the Uterus.

Local and General Treatment of Fibrous Growths of the Uterus.

Surgical Treatment of Fibrous Growths of the Uterus. The above three chapters are full of interest and importance.

Diseases of the External Organs of Generation, Cervix and Uterine Canal.

Three chapters follow on the different forms of fistula, and the Surgical Treatment of this condition, which now, mainly by the genius of Sims, is almost invariably susceptible of cure, as the experience of the author of this work, now much larger than that of any one living or in the past, and probably larger than that of any surgeon in the future can be, has perfectly demonstrated.

Diseases of the Urethra.

Cystitis. Stone in the Bladder and Urethra.

The remaining eight chapters of the work are devoted to the discussion of the Diseases of the Ovary and their Medical and Surgical Treatment.

The volume ends with a copious and excellent index, although we think this might be greatly enlarged, which would add to its convenience and value for reference. The book is one which Gynecologists will often in the future take down from their shelves to consult on special points.

Our readers will see that we regard this work as a most important addition to our Gynecological literature. Indeed, we are certain that every one who does not become acquainted with its contents will be deficient in very many important points of practical knowledge pertaining to the Diseases of Women. In its scheme and its scope it is quite different from the very excellent and deservedly popular works of Thomas and Barnes, and evidently it was never the design of its author that it should take their place, but rather that it should supplement them. It is more the outcome of personal experience and knowledge, than a *résumé* of the literature of the subjects discussed. All who make themselves familiar with the contents of this volume, will feel assured that Dr. Emmet has well earned and well deserved the reputation which he had already won, as one of the great Gynecologists of the present age.

F. B.

DISEASES OF THE BLADDER AND URETHRA IN WOMEN. By ALEXANDER J. C. SKENE, M.D., Professor of the Diseases of Women in the Long Island College Hospital, etc. William Wood & Company, New York, 1878, pp. 374.

Professor Skene, after modestly disclaiming very much originality in his work on the diseases of the female bladder, states that "it

then occurred to him, that the material collected from the brief articles of various authors, added to the results of his own investigations, if put in an available form, might prove of service to others." The book will prove of service, for in the main it is a valuable addition to the library of the general practitioner, and a capital vade-mecum to the gynecologist.

It is so much easier to be an iconoclast in criticism than to write a book, that we feel reluctant to say, that whilst we indorse Professor Skene's work as a book, we are constrained to state that in many of the minor details we are disappointed. In the first lecture (page 4) a section of the normal pelvis is copied from Gray, where the entire uterus is lifted above the bladder, and is, as far as the anatomical situation of the uterus, very like the plate (page 104) which is evidently original, entitled "retrocession of the uterus," with the bladder pulled upwards and backwards; and it does not at all correspond with the plate (page 307), which is very like Breisky's and Aeby's, exhibiting a normality of position of both uterus and bladder, with a simple dilatation of the urethra.

A correct knowledge of the relationship of the bladder to the other pelvic contents is a matter of prime importance, and as Professor Skene expresses himself as being under obligations to Winckel, and as having freely copied some points in pathology from him, it is to be regretted that he did not also copy the first and second plates in his monograph on the female bladder, published in Stuttgart, in 1877. Plate I. is a frozen section by Fürst, and plate II., a schematic drawing of the normal pelvis by B. S. Schultze. The first shows the uterus resting on the bladder and in the same plane. The second places the uterus at a right angle forwards to the vagina and resting entirely upon the bladder. The difference between the plates incorporated by Prof. Skene and those of Winckel is so great, that we must certainly await further investigations upon the frozen and non-frozen subject to harmonize these anatomical discrepancies.

On page 18, we find the following sentence, and as far as our present knowledge goes, it is correct in every particular, "the important point for you to remember is, that, so far as we know, the bladder does not absorb anything, save possibly a little water, unless its epithelial surface is displaced or destroyed, etc." On page 66, however, we find the following contradictory statement (speaking of the deposit of uric acid), "it is precipitated by lack of water, excessive acidity, and possibly, *too rapid absorption of the watery element of the urine while in the bladder.*"

Space forbids a discussion of the analogy between urethral fever and the effect of malarial poison on the bladder and urethra, as drawn by Prof. Skene (pp. 54-55). Suffice it to say, the deductions are not based upon experimental facts, but are evidently reasonings of the *post hoc non propter hoc* nature, and a more systematic analysis of future studies will convince the writer that he has evidently mistaken a series of symptoms peculiar to faulty kidney elimination pending malarial exacerbations, and attributed them to functional diseases of the bladder. At best it is but

theoretical, and the subsidence of vesical symptoms after the exhibition of quinine rather proves a return to renal normal action in consequence of the relief of malarial congestion, and a return to healthy diuresis.

When Prof. Skene leaves that portion of his book devoted to "functional diseases of the bladder," and goes into the question of organic diseases, we at once see that practical bent of his mind which has so often given us true exhibitions of surgical genius. Theoretical and supposititious disquisitions are entirely foreign to his intellectual calibre, but practical illustration is peculiarly his forte. His instruments are ingenious and to the purpose, and in describing their uses in the physical exploration of the bladder he is *tuto, cito, et jucunde*.

If Prof. Skene's book had been confined simply to the lectures on cystitis and its treatment, we believe it would have been a capital monograph, thoroughly useful and very serviceable. The pages devoted to vesico-urethral fissure are the best in the book, because they describe a condition almost hitherto unknown; yet there is a good deal of space devoted to treatment that succeeds only in a few cases, viz.: incision and cauterization. In fact our author states that he has rarely seen a "permanent cure" ensue from such proceedings, but he speaks most highly of dilatation of the urethra as a means of relieving fissure. Knowing these facts, and knowing how excessively annoying such a condition is to a patient, why waste time is temporizing, and why encumber a book with descriptions of such treatment? If it is a good rule in practice to make that operation which is the most likely to succeed, why is it not a good rule in book-making to avoid advising unsuccessful procedures?

In regard to his treatment of the various functional and organic lesions of the bladder, we would class Prof. Skene as being rather too conservative and too much disposed to try many doubtful procedures. In addition to his remarks on the treatment of urethral fissure, we will refer the reader to his extended advice about paralysis following over-distention, where he sums up the treatment by suggesting washing out of the bladder if catarrh exists, paying attention to the general health, using under certain circumstances camphor, musk, cantharides, strychnia, ergot, and the continuous current!! It would evidently be more philosophical to suggest the use of a permanent catheter, or dilatation of the urethra until the bladder walls had obtained perfect rest by a non-accumulation of urine, and then local electricity as a muscular stimulus. In a vast majority of cases, paralysis from over-distention is purely a local trouble, resulting from fracture of the muscular fibres, or connective-tissue laceration with ecchymoses. Here, as in all similar lesions, the prime factor in the restoration of tissue integrity is due to rest and to rest alone. This is to be obtained in this instance by causing the urine to dribble from the bladder as fast as it comes from the ureters, thereby preventing any muscular action whatever; and, if warm-water douching be added, we not only keep the bladder mucous membrane clean, but promote absorption as well.

As above stated, the book of Prof. Skene is worthy the closest scrutiny, because it is teeming with good, practical suggestions, and much valuable information can be gleaned from its recondite pages. If there are any decided shortcomings, they are the results of inexperience as a book-maker, and not because Prof. Skene does not present the newest and truest facts about the diseases of the female bladder. The proof-reading is very inefficient, examples such as Ahlfeldt being called "Ahlfield," and urine, "urien," being quite frequent. These peccadilloes will evidently be corrected in a second edition, of which we bespeak a speedy appearance. The typography is good, and the size of the book most convenient. We advise all gynecologists to read it, and the general practitioner will also profit by its perusal.

M. A. P.

A CLINICAL HISTORY OF THE MEDICAL AND SURGICAL DISEASES OF WOMEN. By ROBERT BARNES, M.D. London. Second Am. from Second and Revised London Ed. With 181 illustrations. Philadelphia: Henry C. Lea. 1878, pp. 784.

We are frequently asked by gentlemen taking special courses in practical gynecology with us, which text-book on diseases of women we would advise them to procure, and we have always replied that, for American practitioners, American books are, *ceteris paribus*, preferable to those by foreign authors, and have, therefore, recommended Thomas in preference to Barnes, these two being the most prominent recent works on these diseases in the English language. But what was true of the former book when its fourth "thoroughly revised" edition appeared five years ago, no longer holds good, since year after year with its manifold advances in gynecological science has passed, and the old fourth edition still remains unchanged. We look in vain in the latest issue of 1878 for such familiar topics as laceration of the cervix and its operative cure, Battey's "normal ovariectomy," Noeggerath's "latent gonorrhea," and the removal of dead products of extrauterine gestation by laparotomy, a procedure practised so successfully by the distinguished author himself. Until these and other defects are remedied, and the book is brought up to and kept at the level of gynecological progress, it would be manifestly unfair to prefer it to a work which, even though written by an English author, and, therefore, perhaps (in the opinion of some) less adapted to American practice, contains in its second edition the latest advances in gynecology. It is this second edition, following the first (long exhausted) after a lapse of nearly five years, which we here propose to discuss. We find the book more condensed (containing seven pages less than edition I.), certainly a new departure in *revised* editions, but with twelve new illustrations, and in spite of the condensation, containing a new chapter on the Relations of Bladder and Bowel Disorders to Uterine and Periuterine Affections. In fact, notwithstanding reference is made, more or less briefly, to a number of important advances in gynecology during the past five years, nowhere is it apparent

that anything of value or interest has been omitted from this edition. One of the pleasurable features of the book (which, however, is not new to ed. II.) is the original character of a very large number (101) of the diagrams, these being marked R. B. Due credit is given for all illustrations. The author has condensed many chapters, reducing their number from 51 to 29, and the difference of arrangement alone shows the thorough reorganization of the book. But we think he has not facilitated the search for the different pathological conditions by printing the headings in small italics on the same line as the text, with scarcely a perceptible break. The illustrations, type, and press-work in the American ed. are excellent.

After these general remarks, and skipping Chapter I., on the Anatomy of the Pelvic Organs, we pass to a brief consideration of the individual chapters.

The author speaks first of the various discharges from the genital tract, mucous (uterine, vaginal, and vulvar leucorrhea), aqueous, atmospheric (*garrulitas vaginæ*), purulent, hemorrhagic, to the first and last of which he devotes the larger portion of the section, discussing very clearly the significance of leucorrhea and metrorrhagia, and the conditions producing either at different times, as well as general rules as to the arrest of the discharge. Hot water as a styptic is quoted from Emmet, but without comment. A useful section is that devoted to the significance of Pain; another, that on Dyspareunia (a term now generally accepted since its coinage by the author in ed. I.), both subjects scarcely referred to in other text-books. The remark made by the author, that pain in the ovarian region very commonly depends on reflex irritation from an enlarged, inflamed (and lacerated—REV.) cervix, and not on ovarian disease proper, is an evidence of the acuteness of his diagnostic and etiological perception. The vast array of pains, aches, and peculiar physical and mental symptoms met with in women suffering from utero-ovarian disease, for which Engelmann has popularized the convenient term “hystero-neuroses” (or -psychoses) is referred to, and the cure by treatment of the local affection pointed out. A very instructive and interesting section is that on the Significance of Sterility, its frequency, general and special causes, and treatment.

The close relation between uterine disease and functional or organic affections of the bladder and rectum is well-known to gynecologists, but in none of the text-books is the subject discussed save in a general way under the head of symptoms of this or that disease. Dr. Barnes devotes a whole chapter of 20 pages to the theme, and points out how in the female, dysuria, vesical tenesmus, incontinence, retention, cystitis, hemorrhoids, proctitis, fissure, fecal retention, etc., are not infrequently the direct result of some, perhaps hitherto unsuspected, uterine disease (chiefly displacements and hyperplasia), the alleviation of which alone relieves the concomitant distress. The influence of cellulosic deposits on the bladder, and chiefly on the rectum in the production of stricture

and obstruction, is also pointed out, as well as the chance of relief by aspiration of the exudation. For this purpose unusually long (8-9") aspirator needles are needed, but Dr. Barnes does not say whether they should be curved or not; the former, it seems to us, from our limited experience, would be greatly preferable for introduction under guidance of the finger, but they are not kept by our instrument-makers here.

The author has revived the old and useful term "dyschezia," difficult and painful defecation (found in Dunglison's Dictionary, ed. 1868, and therefore not, like "dyspareunia," Dr. Barnes' production), and points out the importance of examining the fecal evacuations in cases where the source of the rectal symptoms is not readily apparent. He takes the opportunity offered in this chapter of condemning a "spirit of pure specialism," as a "monstrous thing."

In common with the majority of European gynecologists, Barnes restricts the use of Sims' speculum almost wholly to the performance of protracted operations, in which he states it to be almost indispensable. But the old objection, the need of an assistant (why would a trained nurse, easily obtainable, not do as well or better?—REV.), induces him to prefer his modification of Neugebauer's speculum, a peculiar bivalve or "crescent" speculum. We confess to never having used the instrument, for we never felt the need of it, being a convert to the opinion expressed by Thomas in the preface of his book, that the lateral method of speculum examination is a great advance in gynecology, that he who uses it practises on a decided vantage ground over him who employs the dorsal method, and that the day will come when the great superiority of the levator ani (Sims') speculum will cause it to supersede all others. Now, Barnes uses his crescent speculum in the left semi-prone position also; but the divergence of the blades in the vaginal fornix, while drawing the cervix downwards, also fixes the parts more or less immovably, precisely as does the ordinary bivalve. We can never be brought to believe that such a fixation, and the rigid barrier opposed to the eye and hand at the ostium vaginæ by any form of bivalve speculum, can be as convenient for inspection and operation as the perfect liberty of sight and action afforded us by Sims' duckbill and tenaculum. The necessity of a nurse or assistant is no drawback in operations, for no operation worthy of being so styled should be performed unaided, and any case requiring careful examination equally warrants the assistance of a nurse. Having devoted so much space to the speculum, we will only mention the author's instruments for the application of the nitrate of silver cautery, of fused sticks of sulph. zinc and ointments to the endometrium, and his very useful tampon-speculum, which is a tube constructed on the plan of the ordinary glove-stretcher, with a piston added.

It has always been inexplicable to us why English gynecologists persist in preferring the left lateral decubitus for digital examination—a position in which manifestly the movable pelvic organs are likely to be displaced by their own weight, and in any case less

readily accessible (excepting when the sacral excavation is the part to be explored), and in which bimanual palpation is but unsatisfactorily practicable. Besides we always supposed that the surgeon was restricted to the use of the right hand in this position, for any one who has attempted to examine the whole pelvic cavity with his left index finger in this decubitus must have at once experienced the awkwardness of the practice. But Dr. Barnes not only recommends the left lateral position, but even the *left* index finger, because the right hand thus remains free for abdominal palpation. Of course, so experienced a gynecologist must have satisfactory reasons for his preference, but we certainly, from our own smaller, but still quite extensive experience, would recommend the American practitioner to adhere to the rule universal with advanced gynecologists in this country, of first making the digital examination with one or the other index, aided by abdominal palpation, in the dorsal position, and then placing the patient on her left side for further digital exploration if required, and specular examination. We, moreover, prefer the left side position also for the introduction of the cylindrical and the bivalve speculum, on the rare occasions when we find it convenient to use these instruments.

We are pleased to note the author's view, that to pass the uterine sound through the speculum is a mistake, as we thereby sacrifice the aid of the finger in guiding it, and lose much of the information which the sense of touch imparts. We have always taught precisely the same doctrine to the gentlemen taking part in our practical courses, limiting the passage of sound and probe through the speculum entirely to Sims' duckbill, supplementary to previous sounding under the clothes.

Contrary to the popular belief, and perhaps to the conviction of many physicians, Barnes very truly says that "direct local excitants or derivants" (electricity, hip and foot-baths, leeches to anus, irritant applications to the endometrium, etc.) "are probably the only true emmenagogues." It is not clear that any known remedy possesses the property of causing a discharge of blood from the uterus in a direct or immediate manner.

The author leaves the relation of menstruation to ovulation still undecided. Certainly, ovulation *generally* gives the stimulus to menstruation, and the appearance of the latter may ordinarily be looked upon as a sign of the maturation and dehiscence of an ovum; but ovulation may and does proceed without a discharge of blood from the uterus, and periodical metrostaxis may exist without ovulation.

Dr. Barnes points out the well-known dangers of incision of the internal os as a cure for obstructive dysmenorrhea (especially by mechanical metrotomes), and then describes, at length, the operation which he considers the efficient substitute, viz., bilateral division of the *external* os with scissors or single-bladed metrotome, with subsequent intrauterine (Wright's) pessary. He performs the operation at the patient's house and gives elaborate directions for the prevention of hemorrhage and inflammation, precisely like those

advised by Sims after his really serious division of the os int.; he speaks of the evil results met with by Simpson and others as the result of their temerity in operating in their "consulting-rooms," and he expects favorable results both for the dysmenorrhea and the sterility from this division of the external os. Where the dysmenorrhea and sterility depend on a constricted external os, no one will be disposed to doubt this statement, and surely no gynecologist in this country would hesitate to divide the narrow os ext. by a bilateral or crucial incision with knife or scissors without the least fear of hemorrhage or inflammation. We have done so in numerous instances in the dispensary, dilated the cervical canal, lightly tamponed the cervical canal and vagina, and sent the patient home, and have yet to see the first unfavorable result from this practice. To be sure, we do not divide up to the vaginal insertion, or even half-way, but content ourselves with making a "fair transverse slit," as Dr. Barnes himself says, and keeping the orifice patulous by repeated dilatation. But we do not expect this simple treatment to cure dysmenorrhea and sterility depending on stenosis (with or without distortion) of the internal orifice of the uterus. And for this vastly more common condition (for which Greenhalgh's metrotome and Sims' knife were invented), Dr. Barnes gives us no treatment. He asks whether incision will help to straighten the uterus when a flexion is the cause of obstruction and a sound can be passed. We should attack the flexion, he says. But he does not tell us how. He refers to repeated dilatation by sponge-tents and laminaria (merely cursorily to the safer dilatation by bougies and steel dilators), concludes that they are not efficient and no safer than incision, and finally details the simple division of the ext. os above described, as his panacea for these difficulties. Surely, he cannot be serious! The cure of sterility depending apparently on flexion at the os int., is one of the opprobria of gynecological practice, but we certainly will not conquer the difficulty by confining our efforts to the external os alone. It is the internal constriction which we must attack by knife, dilatation, stems, and vaginal pessaries, one or all, as the case may be.

Another, it seems to us appropriate, substitution is that of "oöphoria" for "hysteria," which latter term does not correctly express the etiology of the affection. These chapters on the Physiology and Pathology of Menstruation are very instructive, particularly that on the Relations of Menstruation to Various Diseases, physical and mental. We will refer only to two points: one, the wisdom in complicated diseases of eliminating one or more of the complications which may be in our power, even though it may not appear to be directly connected with the main symptoms, such as relieving some disorder of menstruation in obscure nervous affections, in pathological processes in distant organs, etc., with the view and often the result of mitigating the general symptoms; and another, the beneficial influence of pregnancy in cases of mental derangement of a more or less "oöphorical" character. A case by Négrier is related, where

insanity came on immediately after marriage. The intellect was always restored during the numerous gestations and the first months of lactation, and again lost when the ovaries regained their functions. We mention this topic because the question came up for discussion at a recent meeting of the N. Y. Obst. Soc., and received no satisfactory answer. Over the Diseases of the Ovary, including Absence, Displacements (an excellent section), Hyperemia, Inflammation, Tumors, Ovariectomy; Diseases of the Fallopian Tubes, including the several varieties of Extrauterine Gestation and their treatment, necessity obliges us to pass rapidly. The author quotes from Prof. Faye a case of abscess of the ovary in a pregnant woman, in which the unsuspected abscess burst several hours after delivery and the woman died of peritonitis. The autopsy revealed a ruptured abscess of the right ovary. The cause which induces Dr. Barnes to relate this case, its rarity, leads us to mention an almost identical case which we saw in Scanzoni's clinic at Würzburg during our term of service, in which the right ovary also was the seat of the abscess and rupture; the woman was suddenly seized with collapse soon after a normal labor, and died, if we remember right, within twenty-four hours, from collapse and the rapidly developing peritonitis. The abscess had not been suspected.

The propriety of including Ectopic Gestation in a treatise on the diseases of the non-puerperal female may be doubtful, but when we consider that cases of extrauterine gestation in the early months and after the death of the fetus almost invariably look to the gynecologist for diagnosis and treatment, rather than to the obstetrician, the utility of this departure from the conventional rule is unquestionable, particularly when the subject is so well handled as by Dr. Barnes. The literature is especially full. Barnes does not believe that the operation of abdominal section, ligating the bleeding vessels and removing the sac after rupture of a tubal ovisac, will prove successful, owing to the shock of the operation, and the difficulty of isolating the bleeding vessels. He does not mention what seems to be the chief obstacle to the popularization of this heroic, but justifiable procedure, viz.: the difficulty of making the diagnosis of rupture of a tubal ovisac with sufficient certainty to justify our risking so serious an operation. Neither does he refer to the method successfully practised (in part) by H. Lenox Hodge,¹ to dilate the uterine cavity and through it the tubal orifice, and deliver the embryo *per vias naturales*, a certainly practicable procedure, and doubtless the first to be employed when the diagnosis is once made. In abdominal gestation, Barnes leans to the secondary operation for removal of the fetus, although he admits the possibility of cases in which primary laparotomy should be performed. With the present high degree of perfection in antiseptic laparotomy, the surgeon who would quietly look on and let a living child die in the abdomen of its mother before practising its removal seems to us decidedly culpa-

¹ Hodge scraped through the uterine wall in a case of interstitial pregnancy, after dilating the uterine canal, and confines his method to this variety.

ble, even though statistics hitherto show a slight proportion in favor of the secondary operation.

We pass over the chapters on Ovarian Tumors and their Treatment, as they contain nothing peculiarly distinctive from the exhaustive work of Peaslee and the practices of Anglo-American operators. We will merely make a personal remark to the effect that the "memoir on the subject" (Electrolysis in Ovarian Tumors) "which I have not had the opportunity of seeing, was read at the session for 1877 of the American Gynecological Society," was by the reviewer, and that the conclusions arrived at in it and a subsequent statement by Ultzmann, of Vienna, show the uselessness of wasting time with that mode of treatment. For correctness' sake the credit of curing a case of ovarian tumor with extensive pelvic adhesions, by clamping a large portion of the cyst in the abdominal wound, cutting it off and closing the wound behind it, should be given to the late Dr. Washington L. Atlee, and not to his nephew, Dr. Walter F. Atlee, who merely reported the case.

The well-known etiology, pathology, and treatment of "chronic metritis," as Dr. Barnes still calls what we know as "areolar hyperplasia" are discussed at some length, and present nothing novel. We think he is wrong in retaining the old term, since, as he himself admits, the most frequent cause of "chronic metritis" is retarded involution after labor, and the same factors which prevented normal involution maintain and aggravate the hyperemia and enlargement, until it becomes a permanent induration of the uterus; but this is surely no more an inflammatory action than is the formation of a callosity or a corn from constant pressure. The term "areolar hyperplasia" seems to us applicable, also, only within a certain period; beyond that, unless absorption takes place from pregnancy or treatment, a *quasi* contraction of the hyperplastic areolar tissue takes place, and Dr. Skene's term of "sclerosis" becomes appropriate. In the treatment of Endometritis, Barnes prefers a method rarely used in this country, the introduction of ointments by an instrument of his own devising; and restricts intrauterine injections to their narrowest limit, proscribing them in marked flexions. Atthill's nitric acid treatment is also recommended for cystic endometritis, curetting with Sims' and Récamier's curettes is advised, but no mention made of Thomas' equally efficient (for this affection) and much safer dull-wire curette, one of the great advantages of which is its use as a means of diagnosis.¹ Dr. Barnes does not accept the variety of this disease described by Routh as "Fundal Endometritis" (an inflammation of the mucous membrane confined to the space between the Fallopian tubes), believing that the symptoms assumed as indicating this localized affection are merely those of general endometritis combined with hyperesthesia of the ordinarily more sensitive fundal mucosa.

Concluding very correctly that inflammation of any one of the perimetritic tissues alone is rarely met with, and that therefore the

¹ See paper by the reviewer on "The Dull Wire Curette in Gynecological Practice," Edin. Med. Jour., March and April, 1878.

terms, "perimetritis" and "parametritis," "pelvic cellulitis," and "pelvic peritonitis," but seldom express the true condition, as generally more or less cellulitis accompanies the peritonitis and vice versa, Barnes adopts the term "perimetric inflammation" as a collective term for all inflammatory processes around the uterus, and advises against injuring the patient by repeated examinations to decide the therapeutically unimportant question of the exact seat of the inflammation.

Noeggerath's "latent gonorrhea," with its resulting chronic perimetritis and ovaritis, is referred to as a doctrine "obviously difficult to prove or disprove," but worthy of further investigation. Certainly a very guarded opinion of a theory, the truth of which even its most ardent partisans admit to be confined to a relatively very small proportion of the cases for which it was originally framed.

An excellent chapter is that on Perimetric Hematocele, a subject which Dr. Barnes seems to have treated with particular thoroughness and preference, as might be expected from the author of the highly interesting paper on "Retrouterine Tumors," which appeared in the St. George's Hosp. Reports for 1877. Active interference by puncture or incision is advised only when suppuration and septic symptoms supervene.

We are surprised to find Dr. Barnes following the logically incorrect classification of Virchow and Carl Braun in including simple hypertrophic elongation of the cervical portion under Displacements of the Uterus. He states, it is true, that from his observation prolapsus and procidentia are distinct from hypertrophic elongation of the uterus, and that there is no necessary connection between the two conditions, but that they are so frequently associated that, for convenience' sake, he describes them together. By so doing he only complicates the comprehension of the pathology of prolapsus uteri; for, although elongation of the uterus is the common feature of prolapsus, mere elongation of the cervix (supra- or infravaginal, or both) with the fundus remaining in situ is an affection by itself and should be described independently. Virchow's "prolapsus uteri without descent of the fundus" is a self-contradiction. True hypertrophic elongation of the cervix should, it seems to us, be classed with the neoplasms of the uterus, or better still, with the diseases peculiar to the cervix uteri, such as laceration, cystic disease, polypus, erosions. But while Dr. Barnes devotes special chapters to diseases of the vagina and vulva, he scatters the cervical affections proper about indiscriminately, and places lacerations of the cervix uteri, for example, unaccountably among the diseases of the vagina. In this connection we wish to correct an unintentional oversight which led us, in our recent paper on "The Indications for the Operation of Laceration of the Cervix,"¹ to state that the whole subject was omitted in Dr. Barnes' work. Wedged in among the vaginal diseases, where it had not occurred to us to look for it, we may perhaps be excused for overlooking the half-page

¹ This JOURNAL, January, 1879.

devoted by the author to this common and important affection. No person would suppose, from reading Dr. Barnes' brief and hasty sketch, that, according to Emmet's experience, one-third of all parous women suffer from the consequences of this injury, and that the differential diagnosis between it and the old-time so-called ulceration of the cervix is still a mystery to many physicians, and not always easy even for the practised touch and eye. That this is so, is well shown by the typical sketches of laceration with ectropium given in Figs. 120 and 121, and described as "hypertrophic elongation of the cervix with eversion of the lips," and the diagrams 101, 103, 117, which clearly show fissure with ectropium of the endocervical mucous membrane, and not simple "epithelial denudation around the os."

To return to the displacements, our own observation leads us to agree with the author that vaginal cystocele may occur independently of cervical hypertrophy and elongation, and the reverse, and that the cervical affection need not influence the bladder functions in the least. Barnes inclines to the view that in the majority of cases prolapse of the uterus is a primary affection, and descent of the vagina secondary, basing this view on the increased weight of the uterus, and its tendency to descend at the chief predisposing time for prolapsus—shortly after confinement. This may be granted for cases in which the prolapse is produced suddenly by violent straining or great exertion; but when it comes on gradually, either a rectocele or cystocele will, we think, generally be found to precede and gradually drag the organ down. We have lately seen two cases of partial prolapse with elongation of the anterior lip mainly, in which the cystocele was enormous, but the posterior vaginal wall firmly attached and its pouch perfectly normal in depth. A very lucid and correct description of the mode of action of the lever pessary is given, viz.: the downward pressure of the anterior longer limb by inspiration and the weight of the abdominal viscera, and the consequent upward tilting of the posterior limb, thereby causing its firm grasping by the strong muscular tissue of the posterior vaginal pouch. Lever pessaries are, however, useful only in procidentia; in actual prolapse only the largest sizes will be retained, and then act by mechanical distention rather than by leverage. Of internal supports, Barnes prefers, next to the Hodge, the cup-and-stem pessary; of external, Scott's elastic loop and abdominal band supporter. He has had more success with Simon's posterior colporrhaphy operation in prolapsus than with any other, believes that a combination of two or more of the operations in vogue (anterior and posterior colporrhaphy, perineorrhaphy, amputation of the cervix) will often be necessary for a complete cure.

As regards the cause-and-effect relations of engorgement and displacement, Dr. Barnes holds that in some cases the engorgement may cause the displacement, and in others the engorgement may be secondary, and points out the frequency of congenital flexion and version. The section on antelexion is rather meagre, and the author gives us but scant advice how to straighten the angle.

Seven lines on the stem pessary, with no expression of opinion whatever as to its curative influence or danger, is certainly treating the only means by which a flexed uterus can be kept straight rather too cursorily. Hewitt's pessary is considered the best support for ante-displacements, but Thomas' cup, Gehrung's \supset (in our opinion the best supporter for anteversion), Hurd's and others are not mentioned. As to prospects of cure by any means little is said. Retroversion and flexion are much more fully treated of in admirably written chapters. The only pessary for retro-displacement apparently known to Barnes is Hodge's old lever, the almost exclusively employed modification of Albert Smith, and the bulb pessary of Thomas (for prolapsed ovaries with retro-displacement) being entirely omitted. Three diagrams show the mode of introduction of the lever pessary on the side (the position always to be preferred; we employ a somewhat simpler method, in two actions, instead of Barnes' three, introducing the pessary with its posterior limb and face downwards in front of the cervix, and then with the right index-finger lifting it over and behind the cervix by one rapid twisting motion). An instructive diagram also shows the occasional vicious action of the pessary, in impinging against the angle of flexion, and increasing it without lifting up the uterus. The reason for this is either a too shallow posterior pouch of the vagina, a too sharp curve of the posterior limb of the pessary, a too lax vagina, or too small pessary.

The remaining chapters on Inversion, Fibroids and Polypus of the Uterus (why uterine polypus should be deemed worthy of a separate chapter when Vaginal Fistula receives no other distinction than an italic heading at the beginning of a line, we do not comprehend), Cancer, Diseases of the Vagina and Vulva, require but short notice. The first four chapters mentioned are very complete and their subjects exceedingly well handled; that on cancer, especially, contains an unusual amount of research and literature. Dr. Wiltshire is credited with a case in which accidental sloughing of the entire uterus followed scraping of the cancerous cervix with Simon's sharp scoop. No credit can be claimed for an accident, but would it not be as well for correctness' sake to state that the operation was done by the Reviewer (who, fresh from Simon's clinic in Heidelberg, and on a visit to London, in June, 1872, was kindly asked by Dr. Wiltshire to operate) and the case reported in an article by him on *The Treatment of Cancer of the Uterus by the Curette* in *THE AMERICAN JOURNAL OF OBSTETRICS* for August, 1872, pp. 326-333.

No mention whatever is made of Freund's new and remarkable operation of complete extirpation of the cancerous uterus, which was first performed in January, 1878, and reported in April of the same year,¹ long enough before the issue of this work to have been noticed. This operation has now been performed close on 20

¹ Volkmann's Klin. Vortr., No. 133, issued April 3d, 1878.

times with fully 50 per cent recoveries, and has, therefore, we think, established its claim to consideration, not only as a justifiable and scientific procedure, but as one of the boldest and most ingenious operations in surgery.

Such important subjects as Vaginal Fistula, and Laceration of the Perineum, should not be hidden under an obscure italic line-heading; the restoration of the latter injury is taken literally from Thomas.

We are conscious of having given but an imperfect review, but think we have pointed out the salient excellencies, as well as some of the infinitely less prominent weaknesses of the book in a sufficiently clear manner to enable the reader to form his own opinion of it. While some of the chapters are imperfect, the majority are strikingly replete with statistical and original research and observations, giving evidence of the thorough care bestowed by the author on their preparation. The book is a rich mine of information, both practical and historical, and should be in the hands of every physician interested in gynecology.

P. F. M.

CLINICAL LECTURES ON DISEASES PECULIAR TO WOMEN. By LOMBE ATTHILL, M.D., etc. Dublin: Reprinted the from Fifth English edition. Philadelphia: Lindsay & Blakiston. 1879, pp. xiii., 342.

A fifth edition of a work by an author so well and favorably known as Dr. Atthill seems to call for little in the way of criticism. We shall, therefore, confine ourselves mainly to brief statements of those passages in Dr. Atthill's lectures which either set forth views more or less peculiar, or bear upon open questions.

The author hints that masturbation is not as frequent with women as some would have us suppose, and we have no doubt that he is correct. As a prominent symptom of this vice, he notes vomiting at night. Clitoridectomy he characterizes as "useless as it is disgusting." Vascular tumors about the meatus urinarius are best treated, he thinks, by cauterizing them freely with the galvanic or thermo-cautery. He doubts, upon very good grounds, we think, if dysmenorrhea is often due to mechanical causes. He objects to the use of any of the means which have been suggested for the purpose of dilating the cervix in the treatment of dysmenorrhea—the plan is slow, painful, and most uncertain, relapse nearly always taking place. In cases of stenosis calling for operation, he divides the os internum as well as the os externum, for he doubts if the former is ever of its normal size, where the os externum and cervical canal are contracted. In describing Sims' operation of division of the posterior lip of the cervix, he says "the probe-pointed blade of Küchenmeister's scissors is introduced into the cervical canal, and the posterior wall is divided up to the os internum." Such a cut would inevitably open Douglas' pouch.

The author decidedly prefers sea-tangle tents to those of sponge—using long bougies of laminaria, several of which are inserted

side by side, as practised by Dr. Kidd. To guard against unpleasant results, he lays down the following rules: (1) Never to dilate the cervix uteri for the cure of dysmenorrhea or sterility depending on a narrow cervical canal or conical cervix. (2) Never to dilate where a large and dense intramural fibroid presses on and partially obliterates the cervical canal. (3) Never to continue the process for more than forty-eight hours.

He regards the curette as a valuable adjunct in the treatment of fungosities of the endometrium, but as not to be relied on alone. Its use is justified only for the removal of small polypi of the size of a pea or bean, and for scratching off granulations of such size as not to be destroyed by nitric acid. He uses Sims' curette.

Dr. Atthill's experience in the treatment of fibro-myoma with ergot seems to have given quite various results, according to the preparation employed. With a good preparation, the method seemed efficient for the control of hemorrhage, but not to cause the disappearance of the growths. The occurrence of abscesses after the use of hypodermic injections of the drug is far less apt to occur if glycerine be omitted. He concludes that Wigger's ergotine is inert; that Bonjean's ergotine exerts a marked effect, lessening the amount of blood lost and shortening the periods, but that its use is liable to be followed by abscesses; that the extractum ergotæ liquidum, B. P., is still more efficient, but sometimes causes severe pain, and is apt, if glycerine be added, to give rise to abscesses.

He prefers the name endocervicitis to express inflammation of the lining membrane of the cervical canal. He speaks highly of scarification in beginning the treatment of cervical inflammation. If the cervix be soft, the punctures should be superficial; but if it be much hardened, they should be a quarter of an inch deep. Nitric acid he regards as by far the best application in most cases of endometritis, both cervical and corporeal. Intrauterine injections are dangerous and uncertain. If endometritis is accompanied with stenosis, division of the cervix is essential to a lasting cure, so as to allow free exit to the discharge. This operation does not *per se* remove sterility, but may do so by aiding in the restoration of the endometrium to its natural state.

The author has found quinine, in doses of five grains or upwards every four hours, useful in hemorrhage dependent on subinvolution, and in menorrhagia where ergot had failed.

The work as a whole is one of great value to the general practitioner. It contains but few statements which we are inclined to question, and those generally of minor importance. Perhaps the reader might be led to a too free use of the uterine sound for ascertaining the mobility of the uterus—a matter which can almost always be made out, we think, by manual examination. Extra-uterine pelvic inflammations are considered quite briefly, in view of their frequency and importance. They are well described, if we take into account only typical cases of cellular and serous

inflammation, but of cases of a mixed nature, and of those of a chronic course from the beginning, it can scarcely be said that "a little care will enable you to discriminate between peritonitis and an attack of cellulitis," etc. (p. 182). The last two lectures are devoted to therapeutical details which are of great practical value.

Dr. Atthill's style of writing is clear and generally simple and forcible, although in several instances he speaks of "instituting" a vaginal examination.

Much credit is due the publishers for the neat appearance of the book. As regards type, paper, and binding, the American edition decidedly excels the English original.

F. P. F.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. VOLUME III. for the year 1878. Boston: Houghton, Osgood & Company, 1879. (From advance sheets.)

The third volume of the "Gynecological Transactions" includes the annual address, by the President, Dr. William Goodell, of Philadelphia on "The Relation of Neurasthenia to Diseases of the Womb;" biographical sketches of the late Drs. Peaslee and Atlee; and the following papers:—"A Case of Rupture of the Perineum without Implication of the Vulva," by Dr. J. C. Reeve, of Dayton, Ohio; "On the Surgical Treatment of Dysmenorrhea," by Dr. J. Marion Sims; "A Case of Extranterine Pregnancy, with the discharge of the fetal bones through the bladder," by Dr. J. P. White, of Buffalo, N. Y.; "A Case of Foot and Head Presentation—fracture of the spine in utero," by Dr. J. T. Johnson, of Washington, D. C.; "The Necessity for Early Delivery, as demonstrated by the analysis of one hundred and sixty-one cases of vesico-vaginal fistula, by Dr. T. A. Emmet, of New York; "The Hand as a Curette in Post-partum Hemorrhage" by Dr. H. P. C. Wilson, of Baltimore; "The Treatment of Post-partum Hemorrhage," by Dr. R. A. F. Penrose, of Philadelphia; "Dermoid Tumors of the Ovaries," by Dr. W. H. Byford, of Chicago; "A Contribution to the Study of the Treatment of the acute Parenchymatous Nephritis of Pregnancy," by Dr. W. L. Richardson, of Boston; "Remarks on Gastro-elytrotony," by Dr. H. J. Garrigues, of Brooklyn; "Three Cases of Ruptured Uterus," by Dr. T. Parvin, of Indianapolis; "The Early Delivery of the Placenta when Previa, with a case of spontaneous detachment of that organ, without hemorrhage," by Dr. I. E. Taylor of New York; "Treatment of pelvic Indurations and Effusions," by Dr. E. Van DeWarker, of Syracuse, N. Y.; "On some Points connected with the Treatment of Sterility," by Dr. A. R. Jackson, of Chicago; "Improved Tents," by Dr. J. P. White, of Buffalo, N. Y.; "A Case of extreme Anteversion at the End of Gestation, with remarks on the treatment," by Dr. I. E. Taylor, of New York; "A Study of Douglas' Pouch," by Dr. J. R. Chadwick, of Boston; "The Pendulum Leverage of the Obstetric Forceps," by Dr. A. H. Smith, of Philadelphia; "Alternating Anterior and Posterior Ver-

sion of the Uterus," by Dr. S. C. Busey, of Washington; "Unexpected Narcotism from Opium Suppositories," by Dr. J. P. White, of Buffalo, N. Y.; "Rectal Alimentation in Pregnancy," by Dr. H. F. Campbell, of Augusta, Ga.

Most of the papers here mentioned, with the discussions upon them, have already been quite fully summarized in this journal¹—which fact, together with the necessity imposed by restricted space, will prevent our making special mention of more than a very few of them.

First of all, we would praise Dr. Goodell for having changed the title of his address, which, if we are not mistaken, originally stood "Nerve-tire and Womb-ills." Although fond of plain, monosyllabic English, we must confess that we look upon such a title as simply hideous. Dr. Campbell's paper ends with "conclusions" which may be condensed somewhat as follows: water and thin solutions are probably absorbed directly into the blood for digestion in the liver; composite elements are never digested in the large intestine; it is unnecessary to add digestives to food injected into the bowel; the natural digestive juices do not descend to the rectum, nor is it probable that they are there vicariously secreted—they being unnecessary to the ultimate digestion and absorption of the food; "intestinal inhaustion" (a reversed peristaltic action, by which the injected liquids are carried upwards to the small intestine) is the true explanation of the efficiency of rectal feeding; it is probable that food, even taken by the mouth, does not simply pass downwards, but upwards and downwards repeatedly until deprived of nutritive elements; that in the early months of gestation reflected uterine irritation causes such reversed peristalsis, and thus gives rise to the vomiting.

Dr. Van de Warker deals, all too briefly, with a subject of vast importance, which has never received from makers of text-books a tithe of the attention which it deserves—chronic extrauterine pelvic inflammations and their products, exclusive of abscess. The author considers that the attacks of pain, which occur at odd times in long-standing cases, are not so often due to any stretching of the organized deposits, as to fresh outbreaks of the inflammatory process. Amongst the measures which may be used for the relief of such pain he mentions swinging the patients gently in a hammock. He believes it to act, not only by the favorite posture which it gives to the body, but also by the soothing effect of the swinging motion—perhaps by inducing cerebral anemia. Applications of galvanism tend not only to relieve pain in themselves, but to facilitate the anodyne action of other measures, and to promote absorption. He credits chloride of ammonium with decided resolvent effects, but only in cases where there is a more or less active inflammatory hyperemia. It should be given in small, frequent doses. A sort of abdomino-vaginal massage is also recommended.

In Dr. Taylor's paper on placenta previa, the case related is one

¹ See number for October, 1878.

in which a very small placenta, which had undergone thorough fatty degeneration, was expelled without hemorrhage. The author presents again his views as to the behavior of the cervix during pregnancy, affirming that its canal does not become merged in the general cavity of the uterus until the commencement of labor, and that consequently the placenta can never be attached to the cervix.

Dr. Jackson concludes his admirable article on sterility by stating that the most frequent causes of failure in its treatment are: (1.) The defective state of our knowledge of the vital processes concerned in conception and gestation; (2.) The frequent presence of undetected disease and malformations of the ovaries, Fallopian tubes, and neighboring organs and tissues, which prevent healthy ovulation and the transmission of the ovule to the uterus; (3.) The general adoption of a physical theory of sterility, resulting in an undue reliance upon an exclusively mechanical and surgical treatment; (4.) Uncured disease of the uterus, which, while not necessarily or usually a bar to impregnation, disqualifies that organ for performing its functions of nidation and gestation; (5.) Want of persistence in treatment.

It is gratifying to observe that the Society's attention, at this its third annual meeting, was very fairly divided between obstetrics and the diseases of women, and that the latter were not considered solely as affording scope for mechanical work. Although the papers are all well worthy of record in the handsome style in which the volume presents them, still it occurs to us that some of the shorter ones, several of which are little else than clinical contributions, might just as well have been brought out in the pages of a journal. We believe that, had this been done, and the space now occupied by them been filled with thorough articles by some of the younger members, of whom we hear too little—and whose works the super-exclusiveness of the society at its last meeting is not likely to increase—the volume would have proved none the less profitable to the profession, to whom we heartily commend it.

The make-up of the volume is, like that of its predecessors, beyond all praise, as is all else from the Riverside Press. F. P. R.

ABSTRACTS.

Prepared by Drs. HENRY BANGA, Chicago; FRANK P. FOSTER, New York; and
HENRY J. GARRIGUES, Brooklyn.

OBSTETRICS.

1. POST-MORTEM DELIVERY PER VIAS NATURALES.—DR. A. THÉVENOT (*Ann. de Gynec.*, Oct., Nov., and Dec., 1878), reviews with great care the comparative merits of post-mortem delivery by the Cesarean operation and by extraction per vias naturales, which latter he calls the Italian method, since what little repute it has thus far obtained is chiefly due to the labors of Rizzoli. Five cases are quoted in which post-mortem delivery was accomplished by version. Two of the children were born alive, and continued to live; the third lived seven hours; the fourth only gave a few signs of life; the fifth probably died during the operation. The author considers that, if a large number of cases should furnish results proportionate to these, nothing could speak more forcibly in favor of the operation. It cannot be denied that post-mortem extraction may present difficulties leading to such loss of time as to involve serious danger to the child. This objection, however, is to a great extent counterbalanced by the promptness with which the proceeding may be undertaken at the very instant of death, or even during the agony, whereas the Cesarean operation involves hesitation and delay. In regard to the chances of saving the child by the Cesarean operation performed after the mother's death, the author first quotes Breslau's conclusions from experiments performed on animals, to the effect that (1) when the mother's death has been sudden and violent, there can be no doubt that the human fetus, as well as those of animals, survives the mother; (2) we may admit that this survival is longer in the human than in other species; (3) the Cesarean operation is not likely to furnish a living child unless done within fifteen, or at most twenty, minutes after death; (4) if the mother has died of some blood disease, such as cholera, typhus, puerperal fever (during pregnancy or labor), scarlet fever, or small-pox, we cannot hope to save the child, because the conditions necessary to its existence have not been wiped out at a blow, but gradually destroyed. The same is true in cases of poisoning by substances, such as hydrocyanic acid and the like, which cause a very rapid decomposition of the blood; chloroform, which does not appear to enter in substance into the child's circulation, seems to constitute an exception to this rule. Discarding as fabulous the old reports upon the proportion of children saved by post-mortem Cesarean section, we find that those reported during the present century show only two successful cases in a hundred attempts. If we choose the Cesarean operation, we must first ask ourselves if the mother be really dead, if we are not about to open a living

woman—a doubt which has stayed the hand of more than one physician. Moreover, the operation is such a grave one in itself, that no one would think of doing it without the consent of the family, and the family often hesitate, sometimes refuse, whence an almost unavoidable delay. Brief, too, as may be the necessary preparations, they demand a few instants, for it should be done as carefully as if the woman were living. Several very striking cases are given, in which the death of the mother was only apparent. Apparent death is less rare in women than in men, and least of all during gestation. In one of the cases (by d'Outrepont), the woman recovered consciousness at the very moment that the Cesarean operation was about to be begun; in two (Peu and Reinhardt), this occurred at the instant that the skin was cut; in two (Budin and Sédillot), consciousness was not recovered until the sutures were being inserted after the operation—both women recovered; in one (Trinchinetti), a *per saltum* hemorrhage from the arteries of the incised uterus converted apparent into real death; and in one (Baudelocque), delivery was accomplished *per vias naturales* after the surgeon had opened the uterus—but the woman did not recover. It can scarcely be denied that, in the present state of science, the physician can distinguish actual from apparent death, but the necessary investigation takes time—time which the accoucheur cannot devote to it, for the child's safety demands instant decision. Upon one sign alone can he depend—the absence of the physiological heart-sounds; but Peu, Rigaudaux, d'Outrepont, and Talinucci found no heart-beats, and Otterbourg explicitly states that auscultation of the chest gave only negative signs. Even admitting Bouchut's opinion that a heart which has been inaudible for twenty minutes cannot resume its functions—the child may die in one-tenth of this time. The harrowing circumstances of such a case, too, may naturally hinder the auscultator from recognizing a few very slow and very feeble heart-beats. It is well, therefore, to treat a woman who dies during advanced pregnancy as if she were only apparently dead. Especially does this hold good in cases of eclampsia. In eight out of seventeen cases of apparent death quoted, the cause of the condition is given, and in six of them it was convulsions. As a rule, a grave disease, an accident, or a profound emotion provokes labor. At the moment of death, especially if it have been slow, it is rare, after the fifth month, that the cervix is not for the most part effaced, and often dilatation has begun. The operation of artificial delivery is, therefore, seldom difficult. After sufficient dilatation of the os uteri with the fingers, aided, if necessary, by a dilating forceps or by slight incisions, the choice of the method of delivery lies between version and the forceps—a question to be settled on general principles.

In addition to post-mortem delivery, the article deals with the matter of inducing and hastening labor during the death-agony. Fifteen cases are quoted in which this practice was followed. Thirteen children were born alive, six of whom survived, and seven lived only a very short time. The two that were still-born seemed to have been dead for several days. Of the living children, one was expelled spontaneously after the induction of labor by uterine douches; twelve others were extracted after artificial dilatation of the cervix—eight by version, and four with the forceps, of whom four and two respectively survived; of the six children who survived, four were born of phthisical women; one of a woman attacked with cerebral hemorrhage, and one of a woman affected with a chronic tumor and with hydramnios. Of the seven children who were born alive, but died within a week, four were born of women with cerebral apoplexy, one of a woman with Bright's

disease, one of a mother attacked with a bronchial and intestinal disease, and one of a patient with sacro-coxalgia, who was dying of hectic fever. Inasmuch as the temperature of the fetus is a degree higher than that of the mother, in diseases accompanied by a very high temperature there is great risk that the child will perish rapidly, and our action should, therefore, be prompt in such cases. The same is true, according to Esterle, in cholera, phthisis, hemorrhage, the acute exanthemata, cerebral inflammation, eclampsia, cancer, syphilis, and lead-poisoning. The operation is to be recommended even in the interest of the mother, for not only does it seem not to shorten her life, but it almost always ameliorates her condition, often prolongs life, and in some instances has been followed by recovery. In all cases subjected to autopsy, the lesions of the genital canal have been found trifling—nothing more than slight lacerations of the cervix; hemorrhage has not been noted in any of the cases, and the uterus has always been found normally contracted. The time to interfere is when the fetal heart-sounds begin to flag, and delivery should be slow or rapid according to the state of mother and child. The remainder of the article deals chiefly with medico-legal questions.

F. P. F.

2. TWO REMARKABLE CASES OF CESAREAN OPERATION.—In the *Journ. de Méd. et de Chir. Pratiques* (quoted in the *Archives de Tocologie*, Nov., 1878), DR. BERTHIER, père, relates two cases of Cesarean section, both resulting favorably to the mother. The *first* case was that of a woman thirty-eight years old, who had had four children previously—two born alive, and two, presenting by the feet, dead. The membranes had broken twenty-four hours before, and the right arm had at once protruded from the vulva. Two prolonged attempts at version failed. In the absence of competent assistants and suitable instruments for embryotomy, the doctor accepted the patient's proposal that he should cut her, and forthwith performed the Cesarean operation. The hemorrhage was moderate, although the placenta was first encountered on incising the uterus. A dead child was extracted. One suture was applied to the uterine wound, and the abdominal incision was closed with five sutures, after which a body-bandage was applied. There was no appreciable shock, and no pain was complained of, save during the incision through the skin and the application of the sutures. Recovery was uninterrupted.

The *second* case was that of a primipara, twenty-three years old, of small stature (1 m. 40). The membranes had broken thirty-six hours before, but the os was dilated to the diameter of only 5 cm. The head had not engaged. It was found impossible to introduce the female blade of the forceps, and an attempt at version proved fruitless, the os uteri being very rigid and the vagina undilatable. A contracted pelvis was recognized, and the Cesarean operation proposed. Having no instruments, the doctor asked for a razor, and was given one without a handle. With this he performed the operation. In this case, too, there was no shock, and pain was felt only while incising the skin and applying the sutures. No uterine sutures were used. The patient did well, the lochia escaping wholly by the lower part of the wound. After recovery, vaginal examination disclosed a sacculated condition of the vagina, due to a constriction below the cervix, barely admitting the end of the finger.

The author concludes that the pain of the Cesarean operation is trifling as compared with that of natural labor; that it is less dangerous to the mother than cephalotripsy or embryotomy; that there is more danger from septicæmia than from peritonitis; that it is less dangerous than gastro-elytrotomy;

that hemorrhage is not greatly to be feared ; that the operation is easily done without assistance ; and that suture of the uterus is more dangerous than useful.

F. P. F.

3. THE CESAREAN OPERATION WITH REMOVAL OF THE UTERUS.—DR. R. PAWLİK, of Vienna, Assistant at von Braun-Fernwald's clinic, reports (*Wiener Med. Wochensch.*, Nos. 2 and 3, 1879) two cases of this operation. The first case was that of a primipara, twenty-six years old, in good general health, but with a deformed pelvis. The pubic arch was markedly narrow ; the conjugate measured 5 cm. ; the sacrum presented a convexity encroaching upon the pelvic cavity somewhat from right to left, besides being remarkably bent at its middle ; the left pubic bone was curved back towards the promontory, the curvature beginning sharply at a point about 1.5 cm. from the symphysis. The uterus reached to within a few fingers' breadths of the ensiform cartilage. The child's head was movable above the superior strait, with the back toward the mother's left side, in which situation the fetal heart-sounds were most plainly heard, at the level of the umbilicus. The operation was performed by Prof. v. Brann-Fernwald, in a room heated to 22° R., a spray apparatus being at work both before and during the operation. The incision at first extended from 1 cm. below the navel to 3 cm. above the symphysis, but was afterwards extended about 3 cm. upwards and to the left of the navel. From the uterus being turned around towards the right, the incision exposed its left side. The thick and swollen spermatic veins gave the left broad ligament the appearance of a nodular tumor, almost black. The uterus was found too voluminous to be brought out through the incision with its contents, and it was, therefore, pushed over to the left, so as to bring the middle of its anterior surface into a line with the incision, and cut into. The membranes now ruptured, and the right shoulder presented. The hand was introduced into the uterus, and the child partly removed by the feet. The lips of the wound grasped the child's neck, and the increased traction thus made necessary brought the uterus out through the abdominal incision. Manual compression of the cervix was kept up until the extraction of the child was completed, and then the chain of a Billroth's écraseur was applied at the junction of the neck and body of the uterus, below both ovaries, and quickly tightened. The bleeding being thus checked, the placenta was extracted, and then the uterus and ovaries were separated by a few quick strokes of the knife about 2 cm. above the chain. A few vessels bled, and the chain was tightened until they stopped. The stump was trimmed down so as to project only about 1 cm. above the chain. Douglas' space, which contained only a few drops of blood, was cleansed, and the abdominal wound was brought together with seven button-sutures, the stump projecting about a centimetre. The cut surface was bathed with a solution of chloride of zinc ; the whole abdomen was enveloped in Lister's dressing, and a Scultetus' bandage applied. The next day a reddish discharge made it necessary to change the dressing, which was done under spray. The chain was found somewhat loosened by shrinking of the stump, and it was tightened, and a Spencer Wells' clamp applied, which stopped the discharge. On the fifth day, the face of the stump was gangrenous and offensive, and it was cauterized with Paquelin's apparatus. This was afterwards repeated. The chain and clamp were removed on the eleventh day ; some gangrenous pieces of tissue were cut away with scissors, and the deep sutures were withdrawn. The projection of the stump became gradually reduced until it was no longer perceptible, and no cervical fistula was left.

The second case was that of a Bohemian woman, forty years old (admitted September 4th, 1877), who stated that she had previously borne six children without difficulty, and that her seventh child, which had presented transversely, was turned and extracted alive and fully mature, May 3d, 1876. After this she gradually became affected with pelvic pains, which increased constantly in severity, until it was impossible for her to walk or stand. The pelvis was found so narrowed by osteomalacia as to call for the Cesarean operation, although the mother's depraved nutrition rendered the prognosis unfavorable. She declared that she had reached term, and complained of pain in the back. The fetus lay transversely—the head to the left, the back forwards. The operation was done in precisely the same way as in the first case, and a living child was extracted. Some hours afterward, an oozing of blood from some small vessels of the stump was discovered, and sesquichloride of iron was applied. A further bleeding on the second day was checked in the same way. The patient died about sixty hours after the operation, having suffered in the mean time with vomiting (of black masses towards the last), hiccough, tympanites, and finally dyspnea. The lower coils of the small intestine were found adherent to the rectum and the pelvic peritoneum by a fibrino-purulent exudation. The stump included 3 cm. of the body of the uterus. In the immediate embrace of the chain the tissue was found in a state of decomposition. The bladder had been somewhat raised by the traction on the stump.

F. P. F.

4. ON THE INFLUENCE OF HEAT AND COLD ON THE ANIMAL AND HUMAN UTERUS. EXPERIMENTAL AND CLINICAL RESEARCHES by DR. MAX RUNGE. (*Arch. f. Gynaek.*, xiii., 1.)—R. experimented on the uterus of about fifty rabbits on account of the greater irritability of this species as compared with the cat or dog. The results of his experiments are as follows: 1. *Application of hot water.* The abdominal cavity being opened and the uterus exposed by gently pushing aside the intestines, hot water of 50° C. (122° F.) was poured into the pelvic cavity, care being taken to prevent the stream of water from directly touching the uterus, but surrounding it from all sides. After some five to ten seconds the following phenomenon occurred. The cornua uteri became bloodless and assumed a wormlike form, instead of their flat appearance. This change of color and form proceeded from the cornua over the entire organ, which, at the same time, performed peristaltic movements. After some time, this phenomenon was either repeated or followed by general contraction of the uterus and vagina. After the tetanic condition of the uterus had lasted for some time, the whitish color gave way to a bluish hue, the visible vessels became dilated and total relaxation followed, while the uterus fell back motionless. For some minutes it remained completely paralyzed, until the blue hue changed to a pink color, when irritability returned. In the virginal uterus the phenomena described were regularly observed, while in the once impregnated uterus some differences were noticed as to the degree of reaction and the time of beginning. Hot water of 50° C. (122° F.) injected into the vagina or the rectum also calls forth vigorous contractions of the uterus. The higher the temperature of the water the more vigorous were the contractions produced, but the shorter their duration and the more complete the ensuing paralysis. Under 40° C. (104° F.), there followed no paralysis; it was most pronounced when the temperature of the water was raised over 55° C. (131° F.). At 65° C. (149° F.) and more, one sudden contraction only appeared and was immediately followed by complete paralysis. A still higher

temperature at once destroyed the vitality of the uterine muscles. 2. *Application of hot air* had the same effect on uterine contractions as hot water. This was best demonstrated by approaching the uterus with a glowing galvanocautery. The experiment never failed, the uterus going regularly through all the stages of peristaltic contraction, tetanus, and paralysis. 3. *Application of cold water* of $+1^{\circ}$ to 4° C. (33.8° to 39.2° F.) caused the uterus to suddenly turn pale and to contract, which state of tetanic contraction was kept up for half an hour. Nearly the same effect followed injection of cold water into the vagina or rectum. Hot water brought in contact with the uterus tetanized by cold produced a new muscular contraction, while the uterus paralyzed by high temperature proved to be insensible even to such specific stimulants as strychnia. 4. *The excised uterus*, put on a sponge steeped in water of blood temperature, contracted readily on being handled. Gradually the motions ceased and the uterus relaxed. If at this stage of the experiment the heated cautery was brought close to the uterus, suddenly peristaltic movements set in, resulting in complete tetanic contractions. If the cautery was removed before tetanus was complete, the spasm died away, and then the same experiment could be repeated several times, thus showing clearly the efficacy of heat in producing uterine contractions.

In order to investigate the question 5, *whether a rise of the blood temperature in animals irritates the uterus*, R. experimented with rabbits whose temperature he had raised to 40° – 42° C. (104° – 107.6° F.), by keeping the animals in a heated box. The results were the following: On opening the abdomen of a rabbit whose temperature for twenty-four hours and more was kept as high as 40° C. (104° F.), the uterus, with no exception, was found in a state of peristaltic and almost ceaseless movements. On applying a slight irritation to such a uterus, as touching it with a hair, the motions would suddenly increase in intensity and terminate in tetanus—*thus doubtlessly demonstrating the increased irritability of a uterus supplied by blood above the normal temperature*. From these experiments R. draws the following conclusions, which, without being entirely new, seem well in accordance with the facts. In case of uterine hemorrhage consequent on atony of the organ, injections of hot water (of 40° C., 104° F.) are a most powerful and reliable means to excite the contractility of the uterine muscles. One case, however, came under the observation of Dr. R., in which hot injections utterly failed to produce the good effect claimed for them. An anemic primipara, after a labor of twenty-four hours, was delivered of a healthy child. The placenta being expelled, the uterus failed to contract, but persisted in a state of relaxation in spite of large doses of ergot and manual friction of the fundus uteri. A hot injection caused contraction, but of short duration, when the injection was again resorted to and kept up for some time. The uterus, however, remained utterly relaxed and paralyzed. Ice water was then used and all sorts of restoratives given, but in vain. The patient died from loss of blood a short time after delivery. The autopsy revealed no visible cause of the hemorrhage, so that R. entertains the opinion that, in this case, the atony of the uterus might have been caused by the prolonged injection of hot water, just as in his experiments he had demonstrated that, under the protracted influence of heat, the irritability of the uterus of the rabbit was utterly destroyed.

Hot injections form also a most reliable mode of inducing premature labor, as R. had occasion to observe in a case which occurred at the clinic at Strassburg. After Tarnier's instrument¹ had been vainly tried, three injections of

¹ Similar in principle to Molesworth's dilator.—REP.

hot water of 40° C. (104° F.), applied during ten minutes, at intervals of one hour, sufficed to excite regular pains. Whether hot injections will prove beneficial in cases of relaxation of the non-impregnated uterus in consequence of displacements, incomplete involution, etc., R. professes himself unable to decide, on account of want of experience. Windelband, however, claims to have seen good results from such treatment. Finally the experiments on animals, whose blood temperature was artificially brought to a higher than normal standard, seem to explain the clinical facts that children are born during a febrile disease (typhoid fever) alive and without loss of blood. The hot blood may excite pains by itself or simply increase the irritability of the uterine muscles so that any other slight irritation suffices to bring about regular pains. Further researches are required, however, to throw full light on these very interesting chapters of pathology.

H. B.

5. ON INDUCTION OF PREMATURE LABOR IN CONTRACTED PELVIS, by DR. MAX WIENER. (*Arch. f. Gynaek.*, xiii., 1.)—In the first part of his article, W. details 16 cases of premature labor artificially induced in Spiegelberg's clinic, at Breslau, since 1870. Of these 16 cases parturition occurred 9 times naturally, 7 times by surgical interference (4 times simple extraction, 3 times version and extraction). Of the cases terminated by Nature 1 died, 2 fell ill; of those artificially delivered, 2 fell ill and none died. As regards the children, out of 16, 7 died during labor, 3 soon after birth (62.5% deaths); of 6 children who left the clinic, 2 died 5 weeks later from emaciation, 2 are still alive, fate of 2 unknown.

The second part of the article W. devotes to more general conclusions based on the preceding statistics and brought under the two following heads: What influences has induction of premature labor I. on the parent, and II. on the child?

I. Since in case of premature labor the compressibility of the skull allows its ready moulding to the pelvic canal, the soft parts of the parent are exposed to no dangerous pressure. Thus, while in former labors, at full term, 2 cases of the 16 above related had acquired fistula of the bladder, and all the others had suffered more or less from the consequences of prolonged and excessive pressure of the head, when premature labor was induced, only 3 became slightly sick, and but one suffered from severe perimetritis and cellulitis. Yet this last case, too, could hardly be regarded as premature, since the child showed all the signs of maturity (weight 3,200 grs., length 53 cm.).

2. If, after induction of premature labor, operations are necessary to terminate parturition, they are of the mildest character. Thus in 7 cases where interference was required, 4 times simple extraction, and 3 times version and extraction were performed—while in 203 labor cases in contracted pelvis at full term the operator had to resort to

forceps,	8 times with 3 deaths.
version,	14 “ “ 2 “
perforation,	31 “ “ 4 “

3. For obvious reasons the uniformly contracted pelvis offers the greatest obstacles to parturition.

4. It is not safe to the mother to induce premature labor if the conjugate diameter is less than 7 cm., nor does the operation seem justifiable if the conjugate diameter is 8 cm. in case of a pelvis narrowed in the conjugate diameter, or 8.5 cm. in case of a uniformly contracted pelvis.

Induction of premature labor is, therefore, conducive to no *direct* danger to

the mother, puerperal infection excepted, which, however, may readily be avoided if the operator follows strictly the antiseptic principles, which, of late, in midwifery as well as in other departments of surgery, have been found a reliable safeguard against pyemia. The death above reported could be traced back to direct infection.

II. In contracted pelvis, premature labor seems to offer good chances for the life of the child. Of 22 children born at full term of 12 of the above-named 16 females, 19 were still-born (86.3%), 3 alive (14%). As mentioned, in 16 premature labor cases the ratio was, still-born 62.5%, alive 37.5%. However, prematurely born children are apt to die soon after birth. W. finds the danger to premature children in the softness and compressibility of the skull, allowing fatal compression of the brain, rupture of its vessels and membranes; malposition and errors in ascertaining the time for operation (the child being not yet viable). As regards the mode of operating, W. favors the use of the uterine douche. In one case, however, the application of the douche was followed by sudden collapse, which, according to W. was caused by air entering the uterine veins. The patient rallied. Twice the douche was followed by hemorrhage, the current detaching the margin of the low-seated placenta. In case of the douche failing to produce uterine contraction, W. successfully resorted to the use of sponge-tents and laminaria.

H. B.

6. ON INDUCTION OF PREMATURE LABOR BY HYPODERMIC INJECTIONS OF PILOCARPINUM MURIATICUM, by L. KLEINWÄCHTER. (*Arch. f. Gynaek.*, xiii., 2.) —By administering hypodermically 0.02 of pilocarp. mur. in a case of pregnancy complicated with anasarca from Bright's disease, Massmann, of St. Petersburg, produced uterine contractions, which, eighteen hours after the injection, resulted in the birth of a living child of 33 or 34 weeks. In another case, also affected with general dropsy, the action of the piloc. on the uterus was still more effective, since seven hours after the injection, the woman gave birth to a living child of 36 weeks. In both cases the mother did well. Schauta (Spaeth's clinic at Vienna) experimented on a primipara in the 36th week. The conjugate diameter of her pelvis being 7.5 cm., it was decided to induce premature labor. With two syringefuls of a 2% solution of pil. mur., applied within seven hours, labor was induced. Eighteen hours after the first injection, a living child was born. Kleinwächter gives the details of a fourth case. He decided upon inducing premature labor on a healthy woman in her third labor, whose conjugate diameter he estimated at 7.7–8.0 cm. (the first children were still-born by instrumental means, the mother contracting vesico-vaginal fistula). The patient was about 33 weeks advanced. No signs of uterine contraction. On May 29th, 1878, at 9½ A.M., injection in the thigh of 19–20 milligr. of pil. muriat.; four to five minutes later, perspiration broke out on the face and over the body; salivation; soon vomiting. During these symptoms, temp. 37.8°, pulse 96–100. After one and a half hours, the symptoms disappeared, when soon the first uterine contractions were felt by the patient, and noticed by the physician. At 4½ P.M., second injection, which was followed by characteristic symptoms as described. Pains became very intense, and at 7½ P.M., the waters broke, the head presenting at the brim of the pelvis, and the os allowing the entrance of two fingers. At 1 A.M. of the 30th of May, the uterine contractions ceased until 6 P.M. of the same day, when, after a third injection (14–15 milligr.), violent labor set in and continued to the end. (Dilatation of the os protracted on account of rigidity of the tissue.) At 10 P.M. of the

1st of June, the patient was delivered by version of a dead child. The mother did well. Further investigations are necessary to test these experiments, for it is obvious that an agent at the same time so reliable and safe in its use would be a valuable acquisition to obstetrics. H. B.

7. THE USE OF PILOCARPIN IN UTERINE INERTIA.—DR. F. SCHAUTA, of Vienna (*Wien. Med. Wochenschr.*, Nos. 47, 48, 49, and 50, 1878), from individual observations as to the effect of pilocarpin as a means of inducing premature labor, was led to try it in cases of uterine inertia after the rupture of the membranes, and to attempt to determine to what extent it might replace or supplement the use of ergot and instruments. He reports fifteen cases occurring in Späth's service. The muriate of pilocarpin was administered hypodermically, the forearm being selected for the injection. The usual effects of *jaborandi*—sweating and salivation—were carefully noted, as a test of the activity of the drug and the susceptibility of the individual. The author divides his cases into four groups. In a case of abortion, in which delay had been occasioned by complete cessation of uterine action, the expulsion of the ovum followed within an hour after the injection, but it may have been due to manual and instrumental manœuvres previously practised, although, since uterine action thus called forth generally shows itself at once, such was probably not the case. In a case in which forty-eight hours had elapsed since the rupture of the membranes, and in which no uterine contraction at all had been observed, the first pains occurred nineteen minutes after the injection, and labor was completed in seven hours. In the third group, consisting of four cases, inertia occurred during the first stage of labor, and in three of the cases the pains had been absent for two and a half, five, and twenty-four hours respectively. In one case the pains came on in two minutes after the injection; in two cases, in seven minutes, and in one case, in nine minutes; and during the first hour thereafter, nine, seventeen, twenty-one, and twenty-three pains occurred respectively. In the fourth group, consisting of nine cases, inertia began in the second stage. In three of them the pains returned in two minutes after the injection, in one case in three minutes, in one case in four minutes, in two cases in five minutes, and in one case in eight minutes. Although strong pains were produced by the pilocarpin, circumstances called for the use of the forceps in two cases. Except for slight local lesions in the two women whose labors were terminated with the forceps, and in one whose labor was protracted by a moderately contracted pelvis, all the mothers made a perfectly uninterrupted recovery, and, indeed, in some of them a particularly rapid involution of the uterus was noted. F. P. F.

8. THE TREATMENT OF ABORTION, by DR. H. FEHLING. (*Arch. f. Gynaek.*, xiii., 2).—F. is at variance with the text-books which remind us not to be too busy in interfering with an abortion, for fear that parts of the membranes might be left in the uterus or some infectious poison communicated to the patient; F. advocates, on the contrary, a more active treatment, to which he is induced by the following reasoning:

1. Even if an abortion is allowed to come to end entirely by nature, remnants of the membranes left in the uterine cavity are a common occurrence.

2. In case of hemorrhage, it seems irrational to lose time in applying tampons, a very dubious hemostatic, while the immediate removal of the fetus would stop the flow of blood at once.

3. If the patient is allowed to lose blood for some days, her constitution is unnecessarily weakened.

4. Removal of the fetus, by shortening the whole process, saves much time to the attending physician.

5. Exploration of the uterine cavity has lost its old-time terrors, since it may be rendered entirely safe and harmless if the operator follows strictly antiseptic principles, by washing his fingers or instruments with carbolyzed water before entering the vagina, and cleansing out the uterus with a two-per-cent solution of carbolic acid after the operation.

Therefore F. gives us the following advice:

a. Where the membranes are intact, use the tampon and wait 10 or 20 hours, after which time the fetus, if not yet expelled, should be removed at once artificially, care being taken to thoroughly disinfect the vagina, uterus, fingers, and instruments with a two-per-cent solution of carbolic acid.

b. Where the membranes are broken before the arrival of the physician, the latter ought to proceed at once to remove the contents of the uterine cavity—also with strict observance of antiseptic principles.

The use of chloroform greatly facilitates the entrance of the finger into the cervix.

In 90 cases of abortion, F. acted according to the principles related. Of these 2 died, undoubtedly infected by students who worked in the dissecting room; 3 times cellulitis occurred, but at a time when F. had not as yet fully recognized the importance of the antiseptic procedure. Only once did the uterine cavity, after the removal of the fetus, again fill with coagulated blood.

H. B.

9. THE PROPER TIME FOR TYING THE NAVEL STRING, by DR. LEOPOLD MEYER, Copenhagen. (*Howitz's Obstet. and Gynecol. Commun.*, vol. ii., 1, 1878).—Quite a literature has sprung up of late concerning the questions when the umbilical cord ought to be tied and if it is good in cases of so-called blue asphyxia to let some blood escape from the cut end before ligating it.¹

All agree that when the umbilical cord is tied immediately after birth, more blood is found in the placenta and the cord than when it is tied after pulsation has stopped in it, or when the placenta has been expelled. All think, therefore, that the umbilical cord ought not to be tied before pulsation has ceased in it. Budin warns against letting any blood escape through the cord in blue asphyxia, while Porak does not see any danger in it. According to Zweifel, the quantity of blood of which the child is bereft by immediate tying of the cord averages a hundred grams, which would be more than one-third of all the blood found in the child, taking the children to average 3,300 grams, and the weight of blood to be, as usual, one-twelfth to one-thirteenth of the whole.

The latest contribution on these questions is by Dr. Leopold Meyer, of Copenhagen. Like Zweifel, he has used Welcker's method for determining

¹ WINKLER: Zur Kenntniss der menschlichen Placenta; *Arch. für Gynäkologie*, Vol. 4, 1872.—INGERSLEV: Om nyfødte Børns Vægtforhold (On the Weight of New-born Children); *Nordisk Medicinsk Archiv*, 1875, Vol. VII., No. 7.—BUDIN: On the Quantity of Blood that can be squeezed out of the Umbilical Cord, *Bulletin Général de Thérapeutique*, T. 90, 1876.—KOHLY: *Thèse de Paris*, 1876.—SCHUECKING: Zur Physiologie der Nachgeburtsperiode; *Berliner Klinische Wochenschrift*, 1877, Nos. 1 and 2.—HELOT: Etude de Physiologie expérimentale sur la ligature du cordon. *Union médicale de la Seine-inférieure*, 1877.—ZWEIFFL: Wann sollen die Neugeborenen abgenabelt werden; *Centralblatt für Gynäkologie*, 1878, No. 1.—PORAK: Consideration sur l'ictère des nouveaux-nés et sur le moment où il faut pratiquer la ligature du cordon ombilical; *Revue mensuelle de Médecine et de Chirurgie*, 1878, May, June, and August.—LEOPOLD MEYER: Ueber die Blutmenge der Placenta; *Centralbl. f. Gyn.*, 1878, No. 10.

the quantity of blood left in the placenta, by cutting this organ into so fine pieces that it forms almost a pulp, washing it out with water, and examining how much unmixed blood has to be added to a similar quantity of water, in order to obtain exactly the same color. This is an exact but troublesome procedure, every case requiring five or six hours' work during three or four days. It requires also a good deal of practice, for at first one is apt to make the liquid used for a comparison too dark, by adding too much blood, and thus the quantity of blood contained in the blood-water is calculated to be larger than it really is. Dr. Meyer examined only cases of primiparæ with full-grown, not asphyxiated fetuses. His results differ considerably from those of Zweifel.

In five cases in which the cord was tied *after the expulsion of the placenta*, he found

Weight of placenta.	Quantity of blood.	
1. 502 grams.	70.34 or 14.01 per cent.	} average 15.07 per cent.
2. 527.5 "	85.5 or 16.21 " "	
3. 600.5 "	104.36 or 17.38 " "	
4. 426.5 "	56.41 or 13.23 " "	
5. 496 "	72.04 or 14.52 " "	

In three cases in which the cord was tied when it had *ceased pulsating*, he found:

Weight of placenta.	Quantity of blood.	
6. 737.5 grams.	96.69 or 13.11 per cent.	} average, 17.25 per cent.
7. 458.5 "	79.71 or 17.39 " "	
8. 600 "	127.57 or 21.26 " "	

In three cases in which the cord was tied *immediately after the birth of the child*, he found:

Weight of placenta.	Quantity of blood.	
9. 610 grams.	125.4 or 20.56 per cent.	} average, 18.26 per cent.
10. 494.5 "	91.93 or 18.59 " "	
11. 657 "	102.6 or 15.62 " "	

If we gather the last six cases in one class, in which the cord was tied early, the average quantity of blood is 17.76 per cent. This makes only a difference of 2.69 per cent between the early and the late cases, or, taking the average weight of the placenta to be 600 grams, about 16 grams, or about half an ounce. The duration of the different stages of labor, the sex and the weight of the child, and the weight of the afterbirth had no influence.

In a second series, Dr. Meyer examined if the different time of ligation had any influence on the weight, *i. e.*, the nutrition of the child during the first ten days of its life. His observations comprise 76 cases, in 35 of which the cord was ligated immediately after the child was born; in 9 it was tied when pulsation ceased, and in 32 after the expulsion of the placenta. In investigations of this kind, it must be remembered that it has been proved that boys gain more than girls, children of multiparæ more than those of primiparæ, large children more than small. By taking all these influences into consideration, the author comes to the result that the *period when the cord is tied has no appreciable influence on the weight* during the first ten days.

In a last chapter he treats of the circulation through the cord and the placenta. As a rule, the pulsation in the arteries ceases within a few minutes, but in one case it lasted ten; in another nineteen; in one forty-two; and in one even fifty-five minutes. Within the following few minutes, the stream ceases to flow from the placenta through the vein. Often the current is reversed, the

blood being driven during the cries of the child back into the vein, in which, then, a shock is felt that may be mistaken for a pulsation. The chief direction from the placenta towards the child is produced by the contraction of the uterus.

He arrives at the conclusion that *the time when the cord is ligated is of no material consequence for the child*. He only thinks it best to wait till the hyperemia produced in the umbilical vein by the first more or less convulsive expirations has abated. In the case of asphyxiated children, he recommends not to wait too long, since the manipulations for restoring the child to life are more easily performed after its separation from the mother. Since small losses of blood do not have any material influence on the child, he believes that in livid asphyxia, if it really depends on a hyperemia of the brain, it may be useful to let escape a small quantity of blood through the umbilical vein.

H. J. G.

P. S.—The great discrepancy between Zweifel's and Meyer's results have engaged Dr. Max Wiener, of Breslau, Spiegelberg's assistant, to investigate the question again, and his results corroborate entirely Meyer's statements (see *Archiv für Gynäkologie*, Vol. xiv., 1, p. 37).

H. J. G.

10. THE INFLUENCE OF THE TIME OF DIVIDING THE CORD ON THE TURGES-CENCE OF THE PLACENTA WITH BLOOD, by DR. WIENER. (*Archiv f. Gynaek.*, xiv., p. 34.)—According to Zweifel's statement (*Centrbl. f. Gynaek.*, 1878, 1), early division of the cord deprives the new-born child of about one hundred grams of blood, which is left in the placenta. Contrary to this, W. found, by careful experiments, that immediately after being expelled from the uterus, the child gets, by means of the contraction of the uterus, all the blood necessary—that a few minutes after birth further contractions of the uterus might drive only minimal quantities of blood from the placenta into the circulation of the fetus. How could a child, whose cord was ligated immediately after birth, cry loudly and make vigorous motions—as every one knows they do—if Zweifel's statement were correct that such a child, through early division of the cord, was short of one hundred grams, *i. e.*, about half of the weight of all its blood? Which conclusion is corroborated by the fact that all our domestic animals follow the custom of dividing the cord immediately after birth, which, probably, they would not do if Nature had intended it otherwise.

H. B.

11. NEPHRITIS DURING PREGNANCY.—DR. M. HOFMEIER, of Berlin (*Zeitsch. f. Geburtsh. u. Gynäk.*, iii Bd., 2 Hft.), reviews the subject of the nephritis of pregnancy, chiefly with regard to prognosis and to the treatment by the induction of premature labor. He shows that, contrary to the general impression, we should not rely on the great probability that the nephritic symptoms will disappear soon after delivery; but that, if the affection has been severe or long continued, or if it has recurred with successive pregnancies, it is liable to end in true chronic nephritis. As to treatment, evacuants hold the symptoms in check for the time being, but their use cannot be long continued. He cannot ascribe any definitive good effects to pilocarpin. The only real remedy is the induction of premature labor, which should be practised whenever, the child having reached viability, the duration or severity of the symptoms seems to threaten the mother's life; and even, in case of great danger, artificial abortion is justifiable. The induction of labor does not, in his opinion, tend to precipitate the occurrence of convulsions, but rather to prevent it, since it is most apt to follow a nephritis of considerable duration.

F. P. F.

12. PUERPERAL CONVULSIONS.—DR. PROS, of la Rochelle (*Arch. de Tocol.*, Jan., 1879), gives three cases illustrating the good effects of blood-letting. One of them is specially notable, as showing in a striking manner, not only the tolerance of blood-letting by a patient apparently in articulo mortis, but the rapid amelioration of the symptoms produced by repeated bleeding. The author considers eclampsia due to the retention in the blood of excrementitious matter, especially urea, the sudden conversion of which into uric acid seems to him the proximate cause of the convulsions. He rejects the idea of a material lesion of the kidneys, looking upon the albuminuria rather as an effort of Nature to rid the blood of the excess of fibrine which exists during pregnancy. With rare exceptions, the treatment should begin with blood-letting to the extent of six, seven, or eight hundred grams. By drawing this amount, we are most likely to avoid the necessity of a repetition “coup sur coup,” but, if that necessity arrives, we must not dodge it. He puts but little trust in leeches behind the ears, but recognizes the usefulness of cold compresses to the forehead, if intelligently and perseveringly applied. In most cases it is reasonable to apply moderately tight ligatures high upon the thighs, to keep the blood of the lower limbs from flowing too rapidly to the nerve-centres. Sinapisms are sometimes objectionable on account of the pain they cause. They are of use, however, where there is a disposition to syncope. Under such circumstances they should be applied between the shoulders, pretty high, upon the epigastrium, and upon first one and then another portion of the lower limbs, watching their effects. One gram of chloral may be given every two hours, its effects being carefully watched. The uterus should be emptied as soon as it can conveniently be done, even if forcibly, but this should be preceded by blood-letting. Sweating should be promoted by hot diaphoretic drinks, the application of a large blister, strongly camphorated, to the inner side of the thighs, and methodical wrapping of the feet and legs with wadding covered with an impermeable fabric. The secretion of urine should be favored by the use of colchicum, aconite, and digitalis. No purgatives should be given. This is his treatment when the seizure has occurred or is certain to take place. If there be only presumptive evidence that it is going to occur, dietetic treatment is recommended; if it be probable, the use of bromide of potassium, diuretics, diaphoretics, and, in case of need, a derivative blood-letting.

F. P. F.

13. KRISTELLER'S METHOD OF DELIVERY BY EXPRESSION IN HEAD PRESENTATIONS.—DR. E. BIDDER, of St. Petersburg (*Zeitschrift f. Geburtsh. u. Gynäk.*, iii Bd., 2 Hft.), maintains that the effect of external pressure upon the abdomen, as advocated by Kristeller, is not only to stimulate the action of the uterus and that of the abdominal muscles, but also to directly propel the child. He urges its more frequent employment in suitable cases, but gives warning that, if the manipulations be carried out too energetically, there is danger of so compressing the placenta as to asphyxiate the child, as he has seen happen in two instances. The proceeding should be managed in the following way: the breech is sought for, and, if it be too much turned to one side, it is brought into proper relation with the presenting head. We now seek, by means of a finger in the vagina, to ascertain the best direction in which to make pressure, so that it shall act upon the head. The direction of the pressure is governed by the curve of the fetal spine, and perhaps also by the relation between the fetal axis and the pelvic cavity. Stationed at the patient's left side, we grasp with the right hand that part of the fundus

in which the breech lies, and make pressure in the required direction, the left hand remaining free for examination. How often the pressure should be repeated, and how forcible it should be, depend upon the nature of the case and upon the effect produced. It may happen that the head manifestly advances to begin with, but does not further change its position on repeating the pressure. This is generally owing to its not yet having attained a deep enough situation, and to the occiput not yet having turned forward, or else there are other mechanical impediments which cannot be overcome by the pressure. In such cases, expression must be given up. In certain other cases, expression, although efficient to some extent, still does not suffice to cause the head to emerge, because the configuration of the pelvic floor opposes the requisite extension of the head. There are cases with marked inclination of the pelvis, the vulva lying far backwards, in which the occiput, if there be considerable flexion of the head, advances sufficiently beneath the pubic arch, but the forehead does not at the same time move enough over the tip of the coccyx to come to bear upon the elastic floor of the pelvis. With little or no extension, the head gets lower and lower, distending the perineum and the region of the anus to a striking degree without emerging. Artificial extension is here indicated, as by the manœuvre of Ritgen and Olshausen. Its employment, simultaneously with expression, easily ends delivery. Not only may the head be expressed when it has already reached the outlet, but even when situated high at the beginning it may, under favorable circumstances, be very quickly and easily pressed through the pelvis and the vulva, so that it seems almost a question whether delivery could be accomplished more quickly with the forceps.

The author then gives an analysis of 81 cases of successful expression, occurring in about 12,000 cases of labor, and thinks it might oftener have been resorted to with advantage. 68 of the children were born alive; of the mothers, 34 did perfectly well, 38 were slightly, and 7 severely ill, and 2 died. One death was due to uterine phlebitis, and the other to eclampsia. There were 2 cases of perimetritis, and 21 of parametritis, but, as most of these followed protracted labor, the author thinks they should not be attributed to the manipulation.

F. P. F.

14. INJURY OF THE FETAL HEAD CAUSED BY ERGOT.—DR. J. VEIT, of Berlin (*Zeitschrift f. Geburtsh. u. Gynäk.*, iii Bd., 2 Hft.), reports a case of labor, in which ergot administered before he saw the patient produced such an amount of injury of the child's head, that he at first supposed that a cephalotribe had been used. There were two fissures of the right parietal bone, 3 and 2 cm. long respectively. The mother's pelvis was normal.

F. P. F.

15. A CASE OF UNILATERAL SACCULATION OF THE CERVIX UTERI DURING LABOR.—DR. M. HOFMEIER, of Berlin, relates the following case (*Zeitsch. f. Geburtsh. u. Gynäk.*, iii. Bd., 2 Hft.): A primipara had been in labor two days, and the membranes had ruptured four hours before her admission to the hospital. She was of low stature, and gave a history of rickets, but there were no noticeable irregularities of the skeleton. The abdomen was strikingly conical. The uterus was completely anteфлекed, with the fundus situated far to the left, and so twisted upon its long axis that the right round ligament stood out as a tense cord running downward and to the right from the linea alba, producing a ridge of the thin abdominal wall. The right tube and ovary could also be plainly made out by palpation. The uterus was so tense that the posture of the fetus could not be plainly felt. The fetal heart was

heard beating feebly and slowly at the level of the umbilicus. Nothing was felt on palpation in the space immediately above the symphysis. In the right hypochondrium, however, close to the crest of the ilium, was a firm, large, immovable tumor, separated by a deep palpable groove from the uterus, and apparently having no direct connection with it. The pelvis was of strikingly slight inclination, and showed in a high degree the changes characteristic of rickets.

On internal examination, no vaginal vault was to be found, but at the upper end of the vagina, far up on the right side, was the os uteri moderately dilated. It was only on bimanual examination, with the patient deeply narcotized with chloroform, that the discrepancy between the state of things found on external, and that revealed by internal examination was cleared up. The tumor was found to consist of the head, which was now movable. The fetal axis lay at almost a perfect right angle to the pelvic axis, only it was not, as is usually the case, that the fetus lay transversely in the uterus, but that both fetus and uterus lay transversely. Reposition by external manipulation succeeded to the extent of bringing the head squarely upon the pelvic entrance, and making a segment of it enter, but whenever the pressure was relaxed, and also with each pain, the uterus resumed its former attitude. The round ligament became still more tense from the intrusion of the head between its points of attachment, and a tumor of the size and consistence of an over-distended bladder was specially noticeable after reposition on the right side. The catheter showed, however, that the bladder lay perfectly empty on the left side. Every fresh pain made the furrow between the uterus and the tumor still sharper, and it was now evident that the latter was the right half of the cervix enormously expanded, which had at first contained the head. Rupture of this already distended cervical wall seemed threatened at each renewal of uterine action, and, as both spontaneous delivery and version seemed impossible, the head was perforated, and the child extracted with the cranioclast. After delivery, the relation of the parts seemed normal, except that the firmly contracted body of the uterus seemed turned upon the left half of the cervix, as upon a hinge, entirely to the left, and that the broad pouch formed by the right half of the cervix was still found between the os internum and the os externum. The patient was discharged on the tenth day with nothing abnormal about the cervix, except some very deep lacerations of its vaginal portion.

As regards the causes of this distortion of the uterus, the author accords weight to the patient's statement that, during the latter months of gestation, she had habitually lain upon the left side, as it was painful for her to lie upon the right side; and suggests that the narrowness of the pelvis would facilitate the deviation of the head and lower part of the uterus.

F. P. F.

16. "CERVICAL PREGNANCY."—DR. W. SCHUELEIN, of Berlin (*Zeitschrift f. Geburtsh. u. Gynäk.*, iii Bd., 2 Hft.), gives the outlines of four cases of this sort of arrested abortion, furnishing, as he thinks, the clinical data which are lacking in previous descriptions, founded, as the latter are, on autopsies or on the examination of expelled ova. The accident generally occurs in primiparæ. Abortion being set up by any cause; the ovum, instead of being wholly extruded, is simply forced into the cervical canal, which it distends. Here it is retained by some abnormal condition of the os externum—stenosis, occlusion, rigidity, or the like, or by bands of decidua still adhering to the body of the organ. The indication for treatment is to remove the ovum. To

do this, the os externum must be either dilated with the finger or enlarged by lateral incision. The latter proceeding he found necessary in two cases. To check the bleeding and to guard against the immediate reunion of the cut surfaces, the application of tampons soaked in a solution of subsulphate of iron is recommended.

F. P. F.

17. Erysipelas in the Puerperal Woman, by Dr. HUGENBERGER. (*Archiv f. Gynaek.*, xiii., p. 387.)—Of 7,536 lying-in patients, 15 contracted erysipelas. 11 times the redness and swelling started from the genital region; 7 out of 15 were primiparæ; 7 times erysipelas complicated retention of membranes; in all cases swelling or ulcers and lesions of the genital tract were present before the attack of erysipelas. Which facts show that erysipelas *in puerperio* is not, as has been claimed, a disease *sui generis*, but simply a complication depending on the infection of some lesion of the genital tract, just as after a wound of some other part. In H.'s wards, 47.7 per cent died, which high rate also gives evidence of the intimacy existing between pyemia (puerperal fever) and erysipelas.

H. B.

GYNECOLOGY.

18. ON HYSTEROTOMY, by Dr. P. MUELLER, of Bern. (*Correspbl. f. Schweiz. Aerzte*, 1878, Nos. 20-21.)—While ovariectomy has been brought to a high degree of perfection within a comparatively short time, its younger sister, hysterotomy, has not yet passed the first stages of development. For not only has even the legitimacy of this operation been denied by able gynecologists; but also the method of operating, the indications and contra-indications for its performance are questions yet to be solved. Under such circumstances it seems to be profitable to record the details of a notable series of five cases which M. presented to the Swiss Society of Naturalists, and of which three were cured and two in a convalescent condition, being out of all dangers incident to the operation itself.

I. Fibromyoma of the fundus of the size of a child's head with considerable elongation and procidentia of the womb in a healthy woman, æt. 48. Incision of the length of 10 cm. and large enough to permit withdrawal of the uterus. No adhesions. The neck of the uterus was seized with a clamp similar to that of Spencer Wells, but stronger, and thereupon the fundus cut off. The ovaries were left. On the sixteenth day after the operation the clamp came away. The stump of the uterus is attached to the anterior wall of the abdomen. The sound enters four cm. into the cervical orifice.

II. Sarcoma of the fundus in a woman æt. 57. Incision 8 cm. long. The uterus drawn out of the abdominal cavity by a cord passed through the fundus. No adhesions. Clamp removed on the fifteenth day after operation; the wound having the appearance of a groove in a finely granulating condition. The stump of the uterus attached to the scar. The sound entering 3 cm. deep into the cervix. Microscopic examination revealed the tumor to be a true sarcoma.

III. Carcinomatous tumor of the uterus in a woman 38 years of age. The womb being pressed against the abdominal wall by means of a uterine sound, an incision was made reaching down from the umbilicus to the symphysis. Three cords were passed through the tumor in order to draw out the uterus, after which Maisonneuve's constrictor was placed around the neck of the womb, including the ligaments. There being still carcinomatous tissue left, M. was obliged to remove the whole cervix, leaving only the dilated vaginal portion as a kind of diaphragm between the abdominal cavity and vagina.

In doing this he followed the new method of extirpating the entire uterus as advised by Freund (*July number, 1878, of this JOURNAL, page 648*). A part of the bladder was tied up with the cervix and removed with the knife. On the seventeenth day after operation the wound was healed, excepting a small part of the lower end which was in a finely granulating condition. A few days latter swelling of the left leg suggested the existence of thrombosis of the ligated pelvic veins. Beyond this the woman did well, and ultimately recovered.

IV. Highly contracted pelvis from osteomalacia. Pregnancy at full term in a woman 37 years of age. The woman having been in labor three days, and the initial symptoms of septicemia urging the speedy termination of the labor, the Cesarean section was performed as follows: The abdominal cavity being opened, the womb was lifted out and Maisonneuve's constrictor applied around cervix and ligaments. Hereupon the uterus was opened, decomposed gases and waters escaping; the fetus followed. Placenta removed by hand. After this the uterus was removed with the knife together with the ovaries. Loss of blood during operation less than in normal parturition. The stump was attached to the lower end of the wound by a few stitches, and the entire wound closed by sutures, the peritoneum being carefully included in the stitches. Ten days after operation the wire dropped; the patient recovered entirely. The sound enters 1 cm. deep into the remnant of the cervix.

V. Total procidentia of the uterus, complicated with considerable elongation of the cervix, fibroid of the fundus, in a healthy woman *æt.* 49. The uterus being pressed against the abdominal wall by means of a uterine sound, an incision was made large enough to draw out the uterus. The clamp being applied round the neck of the womb, the body was cut off. This case was reported ten days after operation, when the general condition of the patient was excellent, the clamp still being in position.

M. draws the following conclusions from his experience in these five cases:

1. As regards the legitimacy of the operation, it can no longer be questioned, since of a series of five cases not one succumbed to the various complications that might be expected (septicemia, peritonitis, etc.).

2. Indications for hysterotomy: The operation should be performed in case of sarcoma and carcinoma uteri. He who would object to this on account of the probable return of the malignant tumor, may be reminded that no surgeon hesitates to remove a diseased breast, although he knows that the cancer is very likely to return. However, hysterotomy should be declined where the disease has already invaded the neighboring organs. As regards fibroid tumors, it must be remembered that such tumors are not deleterious by themselves, as is cancer, but become distressing only by their complications and consequences. Therefore, hysterotomy for uterine fibroids must be restricted to such cases where the rapid growth of the tumor (cysto-fibroma) interferes with the function of the vital organs of the abdominal or thoracic cavity; further, where the tumor, although of small size, maintains a constant irritation of the peritoneum; finally, where the life of the patient is jeopardized by uncontrollable hemorrhages. Yet here also the surgeon should desist from the operation when the fibroid degeneration has spread from the uterus proper to the neighboring organs, the bladder, rectum, etc.

3. Total prolapsus uteri which cannot be overcome by colporrhaphy is another indication for hysterotomy. Kalténbach has lately published such a

case. Indeed, if the operator follows strictly antiseptic principles, the dangers directly incident to laparotomy are reduced to a minimum.

4. Hysterotomy should be performed wherever the Cesarean section is necessary. For, not only should the Cesarean section be almost exclusively resorted to in case of highly contracted pelvis, when the removal of the womb and the ovaries prevents a recurrence of the pregnancy; but, on the other hand, if the uterus be removed, septic peritonitis and secondary hemorrhage—the two chief causes of death after Cesarean section—may better be avoided. The record of published cases of Cesarean section combined with hysterotomy shows five saved out of ten. Although this ratio is a wonderful improvement, the results may become still more favorable if the surgeon begins the operation at an early period in the first stage of labor, before the patient is exhausted by fruitless pains, and if he draws out the intact uterus and ligates it before opening its cavity.

As regards the method of operating, M. favors the use of the clamp, if the cervix together with the ligaments are not too thick, and if the uterus can be drawn out sufficiently to expose the pedicle. Where the stump is thick, he prefers two long needles applied crosswise. Where the removal of the cervical portion is necessary, Freund's method promises the most satisfactory results. It is almost superfluous to add that M. performs his operations strictly according to antiseptic principles.

H. B.

19. FREQUENCY OF FIBROID TUMORS OF THE UTERUS, by H. P. OERUM, Copenhagen. (*Howitz's Gynecological and Obstetrical Communications*, Vol. II., No. 1, 1878.)—While several authors (West, Leudet, Bayle, Foucher, Lair) have published statistics relative to the frequency of uterine fibroids after a certain age, and Klob thinks that they are found in forty per cent of women over fifty years old, very few have examined their relative frequency in a large number of female bodies of all ages, and the discrepancies in their statement is very great. Thus Pollock found thirty-nine cases among 583 bodies, or 6.7 per cent, while Pichard pretends that he and Lair found only 7 cases in 800 post-mortem examinations or 0.8 per cent. New investigations on the subject are therefore in order.

Dr. Oerum found in the records of 1002 autopsies of female bodies of all ages, performed with great care in the City Hospital of Copenhagen during six years (from 1863 to 1865 and from 1875 to 1877),¹ 53 individuals with uterine fibroids, or 5.3 per cent. The different ages gave the following figures: Under 20 years, 294 (no fibroids); 20-29, 149 (1 f.); 30-39, 147 (6 f.); 40-49, 131 (13 f.); 50-59, 101 (14 f.); 60-69, 96 (10 f.); 70-79, 51 (8 f.); 80-89, 8 (1 f.); age unknown, 25 (0 f.).

The percentage then was, under 20 years 0; 20-29, 0.7; 30-39, 4.1; 40-49, 10; 50-59, 14; 60-69, 10; 70-79, 16; 80-89, 12.5. Under 20 years they were found in no case, under 30 they were rare, after 40 they occurred in almost 12 per cent.

As the hospital in question is used by almost all classes, and as the fibroids generally have not been the cause of the admission of the patients, these figures may be regarded as a fair statement of their frequency.

H. J. G.

20. THE VALUE OF HYPODERMIC INJECTIONS OF ERGOT IN FIBRO-MYOMA AND CHRONIC HYPERTROPHY OF THE UTERUS, by G. LEOPOLD. (*Arch. f.*

¹ The author omits the intervening years because the statements as to the uterus are defective.

Gynaek., xii., 2.)—In contradiction to the almost unanimous indorsement by the profession of the hypodermic use of ergot in case of fibro-myoma uteri, experiments have been published lately by Jaeger (from Martin's clinic at Berlin), which deny the effect of the new method, since, with Jaeger, of 21 cases not one had improved under the treatment. This discrepancy of opinion among leading gynecologists about a matter of such material importance as the curability of uterine tumors with their distressing symptoms, has induced L. to go over the field once more. *In order to achieve a satisfactory result from the injections of ergot, great discretion is necessary in selecting the cases, in using preparations of ergot, and it is also most important to continue the treatment with some perseverance.*

a. *Selection of cases.*—Intramural tumors of the body promise the best results. Submucous or subperitoneal tumors of the body may also shrink if the greater part of their circumference is still covered by a sufficient layer of muscular tissue. Pediculated tumors of the body and all tumors of the cervix seem to be unaffected by hypodermic injection, although in some instances the accompanying hemorrhage is lessened. Since the action of the ergot depends entirely on the contractility of the muscular fibres of the uterus, the success of injections seems guaranteed if the muscular fibres have preserved their natural tonus, being neither in a state of fatty degeneration nor separated by numerous disseminated tumors. Attachments of the uterus to its surroundings may also impede its contractility. The tissue of the tumor itself must be such as to yield to compression, *i. e.*, neither fatty nor incrustated.

b. *Preparations of ergot.*—*The preparation must be as fresh as possible.* L. prefers Wernich's extract of ergot to all others, as the least irritating. He dissolves 1 part of it in 5 parts of water (making only 5.0 of such a solution at a time).

c. With some practitioners the patients became tired or disgusted of the treatment, which may be avoided in making the injections carefully, so that pain and inflammation are avoided; $\frac{1}{2}$ or $\frac{3}{4}$ of the contents of a syringe daily suffice, if the patient bears it. L. has used with some patients from 30 to 120 injections. The following results were obtained by L. in 12 cases of fibro-myoma:

Intramural fibr. of the body: 4 cases. Considerable diminution of the tumor and lessening of the hemorrhage after an average of 97 injections, during $8\frac{1}{2}$ months.

Subperitoneal fibr. (body: 6 cases; in 3 cases, tumor not changed, hemorrhage lessened after an average of 57 injections, during $7\frac{1}{2}$ months. In the remaining 3 cases tumor and hemorrhage as before, after an average of 29 injections during $3\frac{1}{2}$ months.

Intramural fibr. (cervix): 2 cases. No change after an average of 48 injections during $3\frac{3}{4}$ months.

L. adds to the value of his article by publishing the results he obtained from the use of the hypodermic injections of ergot in chronic hypertrophy of the uterus. Here also some selection of suitable cases is absolutely necessary. The uterus must be free from any complication by the remnants of perimetritis or by polypus in the uterine cavity. *Those suitable for the treatment by hypodermic injections seem cases of incomplete involution of the womb after abortion or parturition at term.* The following are the tabulated results which L. obtained.

Subinvolution: 8 cases. Great improvement as regards both the general

health and the intensity of the hemorrhage after an average of 30 injections during $14\frac{1}{2}$ weeks. (Once after 10 injections within 10 days.)

Areolar hyperplasia: 5 cases. Great improvement as regards both the general health and the intensity of the hemorrhage after an average of 40 injections during $2\frac{3}{10}$ months.

Membranous Dysmenorrhea: 1 case. Great improvement after 80 injections within $6\frac{1}{2}$ months.

In order to illustrate the action of the injection of ergot, L. concludes his article by giving the anatomical details of post-mortems he was fortunate enough to perform on two patients who had ceased the injection, after having greatly improved, and who died some time afterwards of some other disease.

1. Mrs. R., æt. 28, fibroid of the body of the uterus. 44 injections during 8 months. Great improvement. Died of phthisis three years after the last injection. *Autopsy*: Intramural fibr. as large as a fist. The inner part of the pale, gray, almost bloodless tumor consists of firmly interwoven bundles and shows but a few blood-vessels on dissection; the circumference of the tumor consists, in great contrast to the muscular tissue of the uterus, of a hard, serrated shell of salts of lime. This shell is from 2 to 3 mm. thick and forms occasional prominences. It incloses the large blood-vessels which usually surround a fibroma. *Thus, being cut off from the circulation, the tumor had become almost harmless.*

2. Mrs. R., æt. 34. 135 injections during 10 months. Great improvement. Died of apoplexy four months after the last injection. *Autopsy*: Besides several small tumors, a larger one of the size of a hen's egg is found in the fundus. Its texture is hard, its color pale-gray. It consists of convolutions of bundles of connective tissue and muscular fibres. The latter are partly in a state of fatty degeneration; partly dark-colored, and undergoing a process of incrustation. A mass of blood-vessels, arranged like the layers of an onion, surrounded the tumor. *Here also L. is inclined to attribute the compression of the blood-vessels and the process of degeneration of the tissue of the tumor to the action of the ergot.*

H. B.

21. ON SPONTANEOUS NON-PUERPERAL INVERSION OF THE UTERUS, by DR. BRUNTZEL. (*Arch. f. Gynaek.* xiii., p. 366.)—B. gives a synopsis of 43 cases of spontaneous inversion of the uterus, with the following results obtained by different operations: *a.* Removal of the tumor by écraseur from the wall of the uterus: 3 cases, all cured. *b.* Removal of the uterus by the écraseur. 4 cases cured; 2 died. *c.* Ligation of the uterus. 5 cases cured; 3 died. *d.* Excision of the tumor from the wall of the uterus. 6 cases, all cured. *e.* Excision of the uterus. 2 cases, both died. *f.* Ligation followed by amputation with the knife. 1) of the tumor. 2 cases, all cured. 2) of the entire uterus. 10 cases cured; 3 died. *g.* Different operations. 3 cases, all cured.

Thus 76.7 per cent were cured. In the opinion of B., spontaneous irreducible inversion is best dealt with by ligation followed by amputation of the ligated part.

H. B.

22. A NEW AND SIMPLIFIED METHOD FOR EXTIRPATION OF THE UTERUS, by DR. KOCKS. (*Arch. f. Gynaek.* xiv., p. 127.)—Those acquainted with the extirpation of the entire uterus, as devised by Freund (this JOURNAL, 1878, p. 648), will find it profitable to study the following modification suggested by K. after a successful operation for carcinoma uteri. The most difficult task in the removal of the uterus, namely, the securing by ligature of the base

of the broad ligaments (art. uterina), may best be overcome by applying this ligature to the lower part of the broad ligaments, *after* separating the womb from both bladder and rectum. Thus, a ligature is first brought *around* tube and lig. ovarii; then a separate one around the lig. rotundum, after which the broad ligament, as far as ligated, is cut through with the knife, care being taken to leave untouched the base of the broad ligament. The now following detachment of the uterus from both bladder and rectum is almost bloodless. A double thread is then passed from the space between uterus and rectum through the tissues between bladder and uterus. This may be done by means of a long, curved, blunt needle, or by simply using the index finger as conductor. The thread being divided, the rest of the broad ligaments on each side is tied up. After this the extirpation of the uterus may be completed. K. claims that by following his directions much time will be saved. Catgut is the best material for ligature. The wound in the floor of the pelvis should be closed in a transverse direction. H. B.

23. OVARIAN HERNIA.—DR. A. PUECH, of Nîmes (*Ann. de Gynec.*, Nov., 1878) reviews the casuistics of hernia of the ovary, and gives the following conclusions in regard to its pathological anatomy, symptomatology, etc. The inguinal variety is five times as common as the crural, and four times as frequent as all other sorts together, and is the only kind met with in the newborn. It may exist with an otherwise normal condition of the genital apparatus, but is frequently accompanied with other abnormalities—thus it has been noted four times with uterus unicornis or bicornis, thirteen times with female hermaphroditism, and sixteen times with absence or a rudimentary condition of the uterus. It depends upon an exaggerated descent of the ovary, similar in many respects to the migration of the testicle. In cases of absence of the uterus and hermaphroditism, double hernia is frequent—in all, twenty-eight cases are recorded. Unilateral hernia is most common on the left side. The ovary is invariably accompanied by the oviduct, whilst in acquired hernia this is usually not the case. In six cases the uterus or the corresponding cornu, in three cases intestine, and in two cases omentum have also been found in the sac. Acquired hernia, always unilateral, and more common on the right side, is invariably due to muscular efforts. It is most apt to occur after delivery when there has previously been an intestinal or omental hernia. Crural hernia has been recorded but fourteen times. It is always acquired, although Cloquet found in a neonata a right crural hernia containing the uterus with the ovaries and tubes. This variety is never double, and is equally frequent on each side. Ischiatic or dorsal hernia has been found in two cases by Papen and Camper. In Camper's case there was also an umbilical hernia of the left ovary—the only one on record. Hernia by the foramen ovale has been met with once, by Kiwisch. Whatever the seat or the origin of the hernia, the ovary is prone to pathological changes, the chief of which is inflammation, which has been recorded in twenty-eight instances. Cystic degeneration has been met with seven times, cancer twice, and tubercle once. Cystic adenoma has also been found once. The symptoms of ovarian hernia are vague, and differ according to the age of the patient, the seat and nature of the hernia, the condition of the organ, and the complications. In childhood, particularly, there are scarcely any symptoms beyond the pressure of a swelling. After puberty it becomes more sensitive. In certain cases its presence produces a peculiar sensation, at once painful and voluptuous; sometimes manipulation makes the organ, previously flaccid and uneven, more dense and

smooth, by reason perhaps of a sort of erection. The sensibility is particularly heightened at the time of menstruation, and at this time an increase of volume has been noted in sixteen cases. Strangulation is more apt to occur during menstruation than at other times. When the healthy ovary and tube alone form the contents of the sac, the hernia, if inguinal, is generally pear-shaped, whilst, if crural, it commonly is globular. Both are dull on percussion, are difficult of reduction, rarely become reduced spontaneously, and reduction is never accompanied with gurgling. The congenital hernia is seldom reducible; the acquired is almost always so, at least in the beginning. In size the swelling varies from that of a pigeon's egg to that of a duck's.

F. P. F.

24. SCHROEDER'S SECOND SERIES OF FIFTY OVARIOTOMIES.—In the *Berlin. Klin. Wochenschr.*, 1879, No. 1 (abstracted in the *Allg. Med. Centr.-Ztg.*, 1879, Nos. 6, 7, and 8), the author reports fifty additional cases of ovariectomy, seven of which ended fatally. In the fatal cases the operation was very difficult and complicated—the least so in one in which the adhesions, very extensive and firm, could be overcome only with difficulty and with such an amount of superficial bleeding that the left epigastric artery had to be tied to the abdominal wall. The abdomen was re-opened on the eleventh day, on account of stercoraceous vomiting. The rectum was found compressed by adhesion of the pedicle to the right sacro-iliac joint. In another case, one of sarcoma of the right ovary and very marked edema of the lower half of the trunk, the patient was very weak, and died in collapse two hours after the operation. In another case, the whole peritoneum showed myxomatous degeneration. A fourth patient died probably of paralysis of the heart, although the organ was not found fatty. The three others showed septic symptoms. With these seven cases, the author compares seven others, presenting equal difficulties, but ending in recovery, and argues that the perfect exclusion of infective germs from the abdominal cavity is not always possible, even with the greatest pains, and that doubtless an amount of these germs, capable of proving fatal to patients previously reduced, and subjected to a tedious and difficult operation, may be borne with impunity by a healthy organism after an easier operation. In the absence of such germs, the results are favorable even in the worst cases, and hence the author has undertaken the operation, under imperative indications, in cases in which extraordinary difficulties were foreseen, such as extensive pelvic adhesions. In cases of subperitoneal development, if the extraperitoneal end of the tumor fills up the whole pelvis, it is better to stitch this lower segment into the abdominal wound; but, if it be merely seated upon the basis of one broad ligament, it can be regularly tied, either so as to allow of complete removal, or so that but little will remain within the ligatures. In two cases, the former proved unexpectedly easy—by manual traction a pedicle was formed, and then tied. Two cases complicated with pregnancy did well. From this, together with his previous experience, the author concludes that pregnancy does not impair the mother's chances, and that the course of the pregnancy is not necessarily interrupted by the operation. He recommends operating during the early months, in case the tumor is large, for the broad ligaments subsequently become so gorged with blood and the pedicle is so shortened as to increase the difficulties and dangers attending the operation. In one case the operation was undertaken for the cure of chorea. The ovarian tumor was very small, and found to be complicated with retroflexion of the uterus.

The patient was under observation for ten months, during which time the correction of the uterine displacement by a Hodge pessary caused the symptoms to disappear, but there was a great tendency to reproduction of the displacement, and, as the patient could not remain in Berlin, the author decided to remove the tumor. The pedicle was stitched to the abdominal wall, thus guarding against a return of the retroflexion. The patient made a good recovery, and at the end of five months there had been no return of chorea. The author thinks that these small tumors give rise to more trouble in their removal than those of medium size, and in such cases, as well as in the operation for the removal of normal ovaries, he makes an incision in the linea alba long enough to admit of the introduction of the hand. Amongst the untoward features of very large tumors, the author lays stress upon the redundancy of the abdominal wall, in comparison with the contents remaining, whereby air is apt to be inclosed in the cavity. To avoid this, he packs the pelvic cavity with the intestines, and spreads out the omentum over them, and then, just before tying the last suture, the air is easily pressed out. In unusually large tumors, however, the mesentery becomes so shortened that, even if not adherent, the small intestine maintains a high situation. There is, then, nothing with which to fill the pelvic cavity, and consequently, if we wish to keep out air, we must press the loose abdominal wall deep into the pelvis, which decidedly interferes with the proper application of the sutures. In two cases he removed portions of the abdominal wall. F. P. F.

25. TOTAL EXTIRPATION OF THE CERVIX UTERI.—DR. C. SCHROEDER, of Berlin (*Zeitschrift f. Geburtsh. u. Gynaek.*, iii Bd., 2 Hft.), describes his method of removing the entire cervix, and states that it differs from the ordinary infundibuliform excision, in that the vault of the vagina is purposely opened by a circular incision around the diseased part, so that the whole cervix may be freed, the advantages being, that the uterine canal can be opened higher—above the os internum with little difficulty, that the cervix can be cut through its whole thickness, and especially that radical extirpation of the diseased parts may be practised even if the neoplasm extends to the vault of the vagina, more of which can be conveniently removed than even by Freund's method of total extirpation of the uterus. In many cases the incision through the vaginal wall can be limited to certain portions, according to the direction in which they are invaded by the disease. The infundibulum formed by this wedge-shaped excision of cervix and vagina is closed by passing sutures through the vaginal border on one side up to the apex of the funnel and down and out on the other side, a procedure obviously difficult and feasible only when the uterus is drawn down to the vulva. This possibility is therefore indispensable to the operation. The operation is indicated if the disease has not extended beyond the os internum, if it does not follow the vagina down too low, and if the cellular tissue of the pelvis is free. The author has done the operation five times. One case ended fatally on account of pelvic cellulitis of septic origin. In the other cases the final result does not yet appear; but, as concerns the immediate process of healing, it has been brilliant.

F. P. F.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XII.]

JULY, 1879.

[No. 3.]

ORIGINAL COMMUNICATIONS.

THE TREATMENT OF EPITHELIOMA OF THE CERVIX UTERI.

BY

J. MARION SIMS, M.D.

EPITHELIOMA of the cervix uteri was first described by Gooch and Clarke as cauliflower excrescence. We know very little of its early stages, because it presents no characteristic symptoms till it is well advanced. It never occurs under the 20th year; is rarely seen before 30; is frequently observed between 30 and 40; but is more commonly met with from 40 to 50 years of age. It occurs so frequently about the time of change of life that many women look forward to the climacteric period with dread. It is more frequent in the married than the single. Its first symptom is often a discharge of blood after coitus, or after using the vaginal syringe. Again menstruation may become profuse, and sometimes a serous leucorrhea may call the attention of the patient to the fact that something is wrong. The disease may gradually advance to a serious state, while the patient presents all the outward signs of vigorous health. As it is not at first attended with pain, the patient may think that the irregular or profuse menstruation and the serous discharge are only the symptoms of change of life. And she may not be aroused to a sense of danger till some of her

family or friends see that she is falling off in flesh, and becoming cachectic in appearance, or dropsical.

Then she is forced to seek medical advice, when, alas! it is often too late to stay the ravages of a relentless malady. We have been taught that epithelioma of the cervix uteri is always necessarily fatal. Thirty years ago, the actual cautery, as practised by the French school, was supposed to be the only reliable means of staying its progress.

When Chassaignac introduced the *écraseur* into surgery, it was resorted to for the purpose of removing epithelioma of the cervix when it was sufficiently pedunculated to be surrounded by the chain or wire loop. In several instances, the *écraseur* drew in the neighboring tissue, and made artificial openings into the bladder or into the peritoneal cavity. A remarkable example of the latter accident occurred in my own practice in the Woman's Hospital in 1860, when the peritoneal cavity was opened. Fortunately, the patient recovered from the immediate effects of the operation, but died eight or ten months afterward of cancer.

After the *écraseur* came the electro-cautery introduced by Middeldorpf, of Breslau. It was immediately adopted by Dr. Noeggerath, of New York, and Dr. Byrne, of Brooklyn. One of Dr. Noeggerath's earliest operations with it was on a patient of Dr. Nott's and mine, in the autumn of 1868. The epitheliomatous cervix was successfully removed, and the patient had a good recovery and a respite for two or three years. Then the disease recurred and ended fatally.

The experience of Dr. Byrne with the electro-cautery in this department of surgery is perhaps more extensive than that of any other surgeon, whether in Europe or America, and his success has been remarkable.

Dr. Routh¹ and Dr. Wynn Williams² have each made valuable contributions on the use of bromine as a caustic in uterine cancer.

The bromine treatment was first brought prominently be-

¹ On a new Mode of Treating Epithelial Cancer of the Cervix Uteri and its Cavity. By C. H. F. Routh, M.D., Physician to Samaritan Free Hospital, etc. Vol. VIII., Transactions of the Obstetrical Society of London, 1867.

² Cases of Cancer of the Womb successfully Treated by Bromine. By A. Wynn Williams, M.D., Physician to the Samaritan Free Hospital, etc. Vol. XII., Transactions of the Obstetrical Society of London, 1871.

fore the profession by Dr. Routh, in 1866, and many cases have been reported as having been cured by it.

Twenty years ago, I performed some operations for epithelioma of the cervix uteri; but with such poor results that I abandoned the operation, till the experience of Routh and Wynn Williams in London, and of Byrne and Noeggerath in New York, encouraged me to undertake again the treatment of these hopeless cases. And in 1868 I began to investigate the subject anew. I discovered that the electro-cautery often burnt the anterior wall of the vagina and the urethra unnecessarily, and that it was followed sometimes by unexpected hemorrhage. I now recall an instance in which Dr. Byrne kindly amputated, for one of my patients, the cervix which was the seat of epithelioma. The cervix was pulled forward by hook, the platinum wire was passed snugly around it just at the junction of the vagina and cervix; the battery was put to work; the wire cut partially through the tissues; the cervix was then pulled forward a little more, and the heated wire was drawn slowly through the cervix, amputating it neatly and cleanly, leaving a cup-shaped base covered with a grayish-looking eschar. I was well satisfied with the operation. But at 2 o'clock next morning, about twelve hours after the operation, I was hastily summoned to my patient, who was completely exhausted by a sudden arterial hemorrhage that came on while she was asleep. I fortunately arrived in time to arrest the bleeding with the iron-cotton tampon. On other occasions I have seen the electro-cautery followed by immediate hemorrhage which could only be restrained by forcibly tamponing the vagina with styptic cotton. And many times I have seen the battery fail to work just when it was most needed. Take it all in all, I have been so unfortunate in my experiments with the electro-cautery that I have for some time abandoned it altogether. About this I have no regrets, as I have gotten rid of a troublesome, expensive, filthy, and unreliable apparatus, and substituted for it a method which gives less trouble, is more efficient in execution, and more certain in results. It was claimed by the advocates of the electro-cautery that it was less liable to be followed by septic poisoning and peritonitis than other methods of operating; but experience has not established this claim as being well founded.

The success of all operations for cancer, whether of the cervix uteri, of the mamma, or elsewhere, depends upon the thoroughness with which the operation is executed. Many operations fail because the diseased structure is not wholly extirpated. Complete extirpation is the appropriate method of operation. By the *écraseur* or the electro-cautery extirpation is impossible in the majority of epitheliomatous growths of the cervix uteri. They simply amputate the infra-vaginal portion of the disease, leaving the base or radicles of the cancer deeply implanted in the cervix, from which it readily shoots up again. My plan of operating is that of extirpation, and not that of a merely superficial amputation.

In 1869, '70, and '71, I was in the habit of extirpating the cervix uteri for epithelioma, and of then closing up the conically excavated cervix with silver sutures, leaving a central opening for drainage.¹ In a week, the wire sutures were removed, and the patient sent home. However, the result was anything but satisfactory, for the disease would invariably burst forth in a few weeks, to run its course as rapidly to a fatal termination as if nothing had been done to arrest its progress.

Empiricism often lends valuable aid to the progress of medicine. A remarkable example of this sort was seen in New York many years ago. A noted empiric came to New York in 1854 and advertised to cure cancer. People flocked to him from all parts of the country in great numbers. Of course, the greater number of cases were not cured at all, but I must do him the justice to say that he succeeded in giving relief to many. He taught the profession this truth, which we would not accept from such a source, that better and more permanent results followed the use of caustics, and a consequent sloughing, than followed the use of the knife with healing by the first intention. This we certainly did not know in America till it was demonstrated by Mr. Gilbert, who gloried in being a charlatan, believing honestly in his remedy and method of treatment.

Maisonneuve, who has long stood foremost among French surgeons, has always advocated the caustic sloughing plan of treating cancer, as furnishing better results than the knife possibly could. And Dr. Newton, an "eclectic" practitioner, of New York, claims greater success in open treatment of cancer by the saturated solution of sulphate of zinc than has ever been

¹ The first operation I ever performed in this way was in 1859.

obtained by the cutting process alone. I am satisfied that the plan by caustics that produce a slough is attended with better results than any other.

My plan of operating for epithelioma of the cervix is not to amputate, but, as before said, to exsect the whole of the diseased tissue, following it up to the body of the uterus if necessary, and when all is done that can be done by knife and scissors, then caustic strong enough to produce a slough is to be applied to the part from which the cancerous tissue has been exsected, and allowed to remain there till the slough is ready to come away.

I can better illustrate my method by clinical examples.

In October, 1873, Mrs. M., aged 35, the mother of four children, was sent to me by her physician from a neighboring town with epithelioma of the cervix uteri. She had been losing blood for several months and had a profuse serous leucorrhea. She had no pain whatever and was the picture of good health.

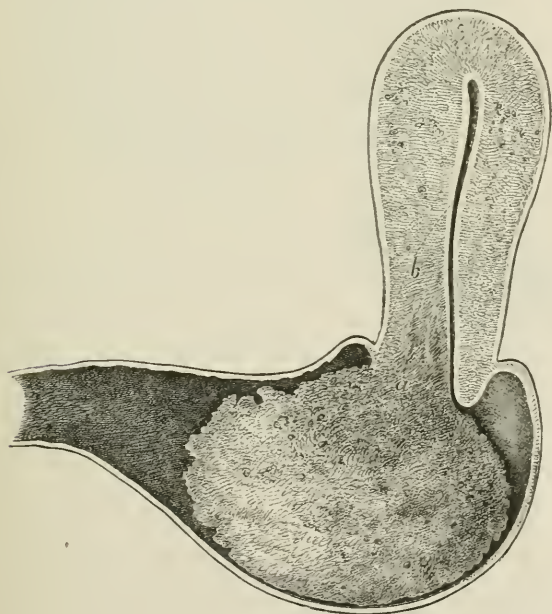


FIG. 1.

On examination, I found the upper part of the vagina filled with a round knobby tumor, springing from and involving the anterior lip of the os tincæ. It was about the size of a Sicily orange, and bled easily on slight pressure. The uterus was movable, and the vaginal membrane was not infiltrated. Fig. 1 represents the tumor

growing from and being a continuation of the anterior portion of the cervix uteri.

This case would have pleased those who advocate amputation, whether by the *écraseur* or by the electro-cautery. With either of these the tumor would have been removed in the direction of the dotted line *a*, leaving the portion between *a* and *b* reaching up to the os internum. But, guided by former experience, I determined to exsect the tumor as far up as I could find any diseased structure. And so, after breaking down the tumor and removing it with scissors at the dotted line *a*, I continued the operation by exsecting with knife and tenaculum the anterior half of the cervix quite up to the os internum, as shown by the dotted line *b*.

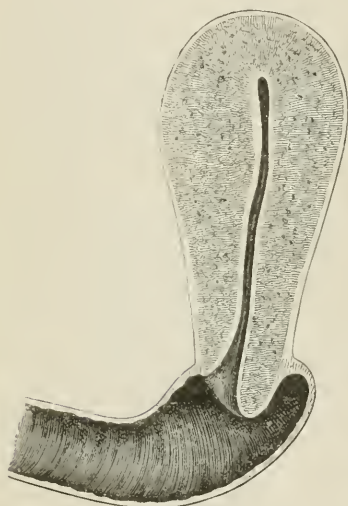


FIG. 2.

With the appropriate after-treatment, the excavated cervical canal filled up with healthy granulations in a fortnight, and in another week Mrs. M. returned home with the injunction to report to her family physician every two months, to see if there should be any recurrence of the disease. When she left me, the os uteri presented the appearance represented by Fig. 2. The anterior lip had been destroyed by the operation, and the cervix anteriorly and the vagina formed a continuous line, while the posterior lip projected normally into the vagina.

Twelve months after this operation, her physician sent Mrs. M. to me again, with a recurrent epithelioma. It presented precisely the same symptoms and the same appearance as the first tumor did.

But it was a little larger and grew wholly from the posterior portion of the cervix uteri, filling up the vagina to a greater extent than the first one did. Fig. 3 represents the appearance and relative size of the tumor. It seemed to be a prolongation of the posterior lip of the os tincae, as the first tumor was the prolongation of the anterior.

The operation by the wire loop, whether by electricity or by the *écraseur*, would have amputated the mass at the dotted line *a*. But I did not stop at this point: I cut as far up the cervix as I could find any diseased structure to remove, which was quite up to the os internum, as shown by dotted line *b*. In three weeks she returned home, seemingly perfectly cured.

The vagina is often shortened by these operations, but in this case the vagina retained its normal size, and at its fundus we could

see, instead of the cervix uteri, only a small puckered sulcus which marked the opening of the uterine canal.

Mrs. M. returned home with the injunction to report herself every two months to her physician for examination.

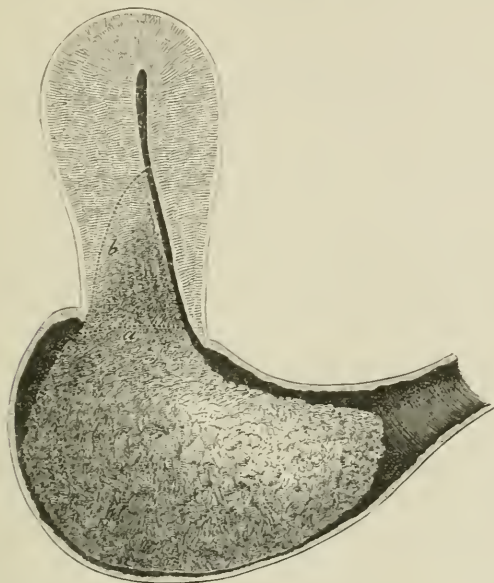


FIG. 3.

Exemption from suffering and the prolongation of life can only be purchased, under these circumstances, by constant vigilance. It is, therefore, necessary to watch all such cases as this from time to time, and whenever a rounded knobby tumefaction appears at the orifice of the uterine canal, or a fungous granulation is seen to spring up, not larger than a pea, we should lose no time in repeating the operation. In case of a mere pearly knob with purple base, it is necessary to incise it, and excise every trace of disease, whether by knife, scissors, or curette, and follow this up with appropriate caustic treatment.

In the last five years Mrs. M. has been obliged to return to New York as many times to have granulations removed. In one instance it was necessary to incise largely the puckered vaginal opening of the uterine canal, and remove by curette granulations amounting in bulk to the size of an English walnut.

Notwithstanding all this, Mrs. M.'s general health continues perfect. She has no pain; there is no emaciation, no cachexia, no loss of appetite, and no evidence of constitutional poisoning.

But for these operations, there is every probability, nay, certainty, that she would not have survived the first invasion of the disease more than twelve or eighteen months. For eighteen months is about the ordinary duration of this disease. Prof. Fordyce Barker has seen one case that lasted for twelve years, and I have seen one of ten years' duration, and another of six. But in these two, there were never at any time great hemorrhages, nor great wasting from profuse serous discharges. Instead of large masses of granular matter to break down and slough off, leaving large sinuses to distil a septic, ichorous fluid to be absorbed and to poison the blood, I noticed a small indurated irregular fissure with knobby granulations that gave issue to sero-pus in small quantities, occasionally mixed with blood, all of which found an easy outlet from the vagina. Instead of the ulceration extending up into the body of the uterus, it gradually and slowly encroached on the walls of the vagina. Cicatrization seemed slowly to follow ulceration, till the uterus was gradually drawn down from its position, high up in the pelvis, by the vagina which as gradually shortened, till it had almost entirely disappeared, and the fissure marking the place of the uterine outlet was not more than an inch from the ostium vaginae. When large fungoid tumors break down and slough, and when this sloughing extends up into the body of the uterus, then the system becomes rapidly poisoned by the absorption of septic matter, and the patient dies generally in a dropsical state. Again death may come by some intercurrent disease, such as peritonitis, pneumonia, etc. Matthews Duncan¹ truly says: "The chief causes of death in cancer are peritonitis, uremia, septicemia, pyemia, and complications from diseases of veins or important viscera."

In my method of operating for epithelioma of the cervix, we need the speculum (Sims'), a proper knife, medium-sized scissors slightly curved on the flat, a dozen or more sponge probangs, tenacula, volsella, lock forceps for seizing arteries (Fig. 4), and styptic cotton-wool.

Hemorrhage has always been the great bugbear of uterine surgery. Until the introduction of the *écraseur* by Chassaignac, nothing was more common than the use of Gooch's

¹ Clinical Lecture on Cancer of the Body of the Uterus. By J. Matthews Duncan, M.D., LL.D., etc. *Medical Times and Gazette*, April 12th, 1879, p. 391.

canula and ligature for the removal of a simple uterine polypus. And the experience of Robert Lee, and others of his day, proves with what unfortunate results. For patients often died



FIG. 4.

of septicemia from the absorption of septic matter before the sloughing tumor could be separated from the living tissue. Such accidents never happen nowadays, because those who fear hemorrhage use the *écraseur* or the electro-cautery, and those who do not, remove the polypus with scissors, and arrest the bleeding, if there be any, with styptic cotton-wool.

With proper precautions, and with appropriate means of arresting hemorrhage, there can be no such thing as hemorrhage to any serious extent in any of these operations for epithelioma. If the tumor have any degree of solidity, there is no danger of hemorrhage at all. If it be soft and easily scooped away with the curette, the bleeding may be profuse.

But when it is soft and ready to break down, the *écraseur* and cautery are equally inapplicable, and we have no alternative but in the curette, whether the bleeding be profuse or not. But there is never any danger if we have prepared ourselves to control the hemorrhage, it matters not how furious it may be.

Let us suppose that we are called upon to operate on such a case as is represented in Fig. 1 or Fig. 3.

The patient, properly prepared and etherized, is to be placed on a table in the left lateral semiprone position; the Sims speculum applied, the tumor is to be seized with volsella, pulled forward, and held firmly. We then begin with the curette to break down and draw out the cancerous masses as fast as possible. But if fortunately the tumor holds well together, then we take the scissors and begin to cut loose the tumor from the cervix uteri anteriorly and laterally. When the tumor is rather firm and requires the knife or scissors for its removal, the bleeding is not severe, and constant sponging by the assistant keeps

the vagina tolerably clear of blood. If the circular artery should be cut, we clasp it with a pair of spring forceps, the bleeding ceases instantly and we proceed with the operation, the forceps hanging from the vagina and still holding the artery. Sometimes we may have two spring forceps in use at one time, and now and then three. But this is very seldom. And when the forceps are removed we usually find that they have succeeded in controlling the hemorrhage entirely. Let us suppose that we have removed all that it is possible to remove with seissors. We might think the operation finished, but it is not so. With sponge probangs we clean out the cervical cavity made with seissors, and we pass the index finger into it, and if we find any indurated structure, whether the size of a grain of wheat or much larger, it must be removed.

Just as long as we can detect any of this indurated tissue by the touch, just so long must we continue to excise it, till the walls of the uterus are entirely freed from it, and have the soft elastic feeling characteristic of the natural structure. We remove this indurated tissue piecemeal, some pieces being not larger than a barleycorn, while others may be as large as the little finger nail. This is by no means difficult. While the patient lies in the left lateral semiprone position, the uterus is drawn down almost to the ostium vaginæ by a tenaculum or forceps; the left index-finger is passed into the uterus; the sense of touch immediately detects the horny, gristly, abnormal tissue, which is hooked up by a tenaculum, raised up to view, and cut out with a knife. My uterotome (Fig. 5) answers this purpose admirably. Any narrow-bladed knife with a long handle will do just as well.

This process is to be continued till every portion of gritty-feeling tissue is removed.

When we are perfectly satisfied that all diseased tissue is removed, which is known by the touch, we then, with seissors or knife, trim the edges of the cavernous opening made by the operation all around, whereby the vagina becomes continuous with what remains of the supra-vaginal cervix uteri. But the cervix, properly speaking, infra-vaginal portion, will be found to have been wholly removed with the diseased mass.

The lock forceps, if there are any in use, are to be removed, the parts to be sponged as dry as possible, and quickly filled

with styptic cotton-wool, rendered styptic either by the solution of persulphate of iron, or a saturated solution of alum. If iron is to be the styptic, then we take liq. ferri subsulphatis, 1 part, water, 2 parts. Mix, and saturate the cotton-wool, and squeeze it almost dry, and then fill the conical cavity made in the uterus by the operation with it. Pack it in tightly and cover it over with other layers of the cotton-wool styptic tightly packed, till the upper third of the vagina is securely tamponed. This is to be held *in situ* by plain cotton-wool wet in carbolized water, packed in till the whole vagina is firmly tamponed.

The patient must not be removed from the table to the bed as long as there is any oozing of blood. We must be sure that it is completely arrested. If we are in any doubt about it, a portion or even the whole of the tampon must be removed, and be reapplied anew, taking care to do the tamponing in a more thorough manner.

If we choose alum as the styptic, then prepare a carbolized solution (1 to 40) and saturate it with pulverized alum (1 to 12). Wet the cotton-wool in this solution, squeeze it nearly dry, and put it in a stoppered bottle and it is ready for use.

The operation over, the patient is put to bed. It is often, almost always, necessary to administer an anodyne, and the catheter must be used as required. In a few hours, perhaps four or five, it may be necessary to remove with the tampon screw a few pieces of the cotton-wool from the lower part of the vagina to take the pressure from the neck of the bladder, and even to relieve pain in the back.

We may remove more of the tampon on the following day.

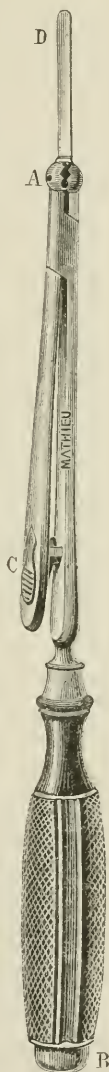


FIG. 5.



FIG. 6.

But that portion of the tampon that fills the upper part of the vagina, and especially that in the neck of the uterus, is not to be disturbed till the fourth or fifth day. When this is wholly removed, then the conical excavation of the cervix, the real seat of the epitheliomatous growth, is to be filled with cotton-wool wet in a solution of chloride of zinc. Chloride of zinc is soluble in its weight of distilled water. But I usually make the solution thus

R Zinci chloridi..... 3 v.
Aq. destillat..... 5 i.

M. ft. sol.

Saturate cotton-wool in this solution, then squeeze it dry and it is ready for use. Bits of cotton-wool thus prepared with chloride of zinc, the size of an almond, are to be snugly packed into the cervix till it is filled up to the level of the vagina. Then the upper part of the vagina is to be tamponed tightly with cotton-wool saturated with a solution of bicarb. soda.

The chloride of zinc produces intense pain, and it is always necessary to give morphia hypodermically and in sufficient quantities to relieve it.

If the zinc cotton-wool is too wet, the superabundant fluid runs down the vagina and inflames it. It is, therefore, necessary to squeeze it very dry before stuffing it into the cervix.

The cotton-wool wet with a solution of bicarbonate of soda is intended to protect the walls of the vagina against the irritating qualities of the zinc. But it does not seem to do much good. I have tried the albumen of egg, tannin, and other protections that have been recommended to me for this purpose, but with no better results.

It is very desirable to find something that will neutralize the chloride of zinc, and protect the walls of the vagina against its irritating qualities. The chloride produces no permanent mischief, but it is attended with suffering, and it irritates the urethra, thus producing frequent micturition.

The cotton-wool that retains the chloride *in situ* may be removed in part the next day, and wholly in a day or two more. But the zinc wool in the cervix is not to be interfered with till the fourth or fifth day after the operation. For this purpose it is better to place the patient on the table in the left lateral semiprone position and to use a Sims speculum of a small size.

For the vagina will be found to be so puckered up by the action of the chloride of zinc that a large, or even an ordinary speculum could not be introduced without giving great pain.

When the parts are well exposed, we may or may not remove the zinc cotton-wool from the neck of the uterus. If it is in the least adherent, it is better to leave it for another day, and then it will be removed with facility and without danger of hemorrhage.

When the zinc wool is all removed, we will find the hollow cone that it occupied smoothly covered over with a cup-shaped slough which may be taken away, sometimes in one entire piece. Again it may break and come away in two pieces. It is usually from one to two millimetres thick, say about a sixteenth of an inch. It is opaque, tough, pliable, smooth, and of a dull pearly-grayish color. It leaves a cavity filled with healthy-looking granulations, which under the daily use of carbolyzed warm vaginal injections heals up in ten or fifteen days.

It will be seen that the treatment proper after the operation occupies about ten days, and that cicatrization then requires about a fortnight more. The operation divides itself into two stages, that of extirpating the whole of the diseased tissue, and that of filling up the hollow cone made in the cervix by this operation and of tamponing the vagina to retain the cervical dressing in its place. The only object of this is to arrest all hemorrhage. If the seat of operation could be cleaned of blood and made sufficiently dry, we might resort to the caustic at once, but that is seldom possible. And so it is necessary to use the iron or alum styptic to arrest all oozing of blood. Once the styptic dressing is made, it will take four or five days to get it away. And we must be careful not to hasten it, for fear of provoking a bleeding which would be the means of procrastinating still further the application of the caustic.

For removing the tampon, pass the left index finger into the vagina, and then pass the tampon-screw Fig. 6, by the side of it, and remove the tampon, a plug at a time, till we take away the desired quantity.

I have used the bromine, as recommended by Drs. Routh and Wynn Williams, and think it as painful as the chloride of zinc and as efficient, but not more so. But, as it affected my eyes and nose painfully, I returned again to the zinc as being easier of application, and equally powerful in result.

The bromine is dissolved in alcohol, one part to ten, according to Routh, or one part to five, according to Wynn Williams. Cotton-wool wet with the solution is placed just where we wish to produce the slough, and is then covered over with cotton-wool saturated with a solution of the bicarbonate of soda for the purpose of neutralizing the bromine, and preventing its injurious effects upon the walls of the vagina.

Sir James Y. Simpson was in the habit of using sulphuric acid in epithelioma of the cervix, but I believe he obtained no great results from it. Dr. Newton, of New York, as before stated, claims that the sulphate of zinc is the best of all potential caustics in cancers of every variety. It is certainly as painful as the chloride, but I have not experimented with it sufficiently to say how it compares with the chloride in efficiency. Perhaps it may be that I have been so well satisfied with the effects of the chloride that I have not given thought and time enough to the sulphate.

Whatever caustic we may select, whether bromine, chloride of zinc, sulphate of zinc, or what else, we should always precede its use by operative measures to remove wholly all diseased structure as far as possible with knife, scissors, or curette. We must get down to seemingly healthy structure before we apply the caustic.

Maisonneuve, if not the first to introduce chloride of zinc as a caustic in cancer, has certainly done more to popularize its use with the profession than any other man of his time. Demarquay was a strenuous advocate of its use and preferred it to any and all other caustics in cancer of the uterus. Maisonneuve uses what is called *mèche*, which is made by mixing the chloride with flour, then drying it and cutting it into little arrow-shaped pieces, which are strong enough to be pushed into the structure that is to be destroyed by the sloughing process. So great is the confidence of Maisonneuve in the safety and efficacy of this method that he now never amputates a carcinomatous breast, but he surrounds it with punctures into each of which he pushes a piece of his horny chloride of zinc paste. Of course, the pain is very great, but thanks to the hypodermic use of morphine, it soon becomes bearable. But it is necessary to give the morphine with a free hand. In a few days after the chloride paste is thus applied, the breast

sloughs, and in due time a dead mass, it may be as large as the fist, rolls out, leaving a healthy-looking granulating surface beneath, which gradually closes up and ends by complete cicatrization.

Maisonneuve contends that results are obtained by his method that have never been equalled by the knife and healing by the first intention.

In 1874, Mrs. E., 40 years old, the mother of grown children, who had enjoyed uniformly good health, had occasional attacks of flooding at the menstrual periods, and thought she was threatened with change of life. Between the periods she had a profuse discharge from the vagina, which was serous and stiffened her linen.

Feeling herself getting weaker under the exhausting discharge of blood and serum, she was induced to consult a physician, who said she had a cancerous tumor which would in ten or twelve months end fatally, as it had passed the stage at which an operation could be performed. As the case was hopelessly incurable, he proposed no treatment whatever. Indeed, he told her that if any man were rash enough to undertake an operation, she would bleed to death on the table, and that it would be wiser and safer to do nothing at all, leaving its progress and termination entirely to the laws of Nature.

In a state of desperation, Mrs. E. came to see me, and gave the history already related.

The vagina was filled with a tumor as large as a good-sized orange, which bled profusely on being gently touched. It was so large that I could not positively determine the nature and extent of its attachments. It appeared to spring from the anterior lip of the *os tincae*, but how far it ran back on the posterior lip, I could not determine.

However, I agreed with her physician that, if left to itself, it would probably terminate fatally in a year, but I differed with him in regard to the feasibility of operation. I, therefore, proposed to remove the tumor, and explained to Mrs. E. fully all the steps of the operation, telling her there was not the least danger of her dying under the operation, as she feared she might.

With the assistance of Drs. Harry Sims, Nicoll, Metcalf, Jr., and W. T. Walker, the operation was performed in May, 1874.

The patient properly prepared, etherized, and placed in the left lateral semiprone position, the Sims speculum, large size, was introduced; the tumor was then grasped with volsella, drawn forward a little, held firmly, and the superficial friable portion of the tumor was quickly broken down and drawn out with the curette, and then the more resisting fibrous portion of it was cut away with scissors down to a level with the *os tincae*. It was now seen that the posterior lip was not at all involved, and that the tumor grew from the anterior inner portion of the cervix. Its attachments ex-

tended along the anterior and inner face of the cervix quite to the os internum. The radicles, so to speak, of the tumor were neatly dissected from this portion of the cervix, leaving what seemed to be perfectly normal cervical tissue.

The case was then treated according to the rules already laid down for the management of such cases. That is, the bleeding was arrested by styptic cotton-wool (iron), which remained in situ five days. When it was removed, its place was filled with chloride of zinc wool, which remained five days

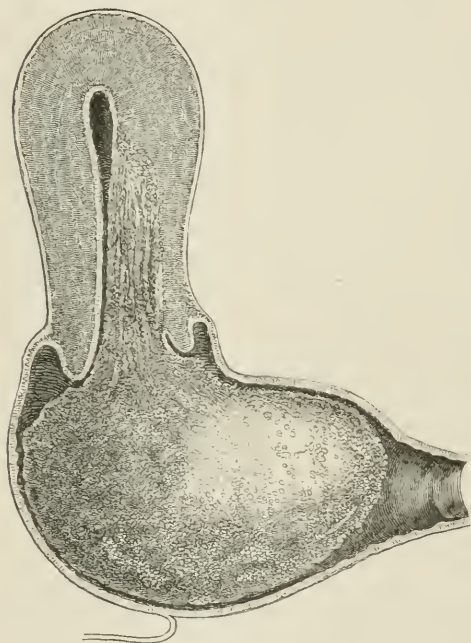


FIG. 7.

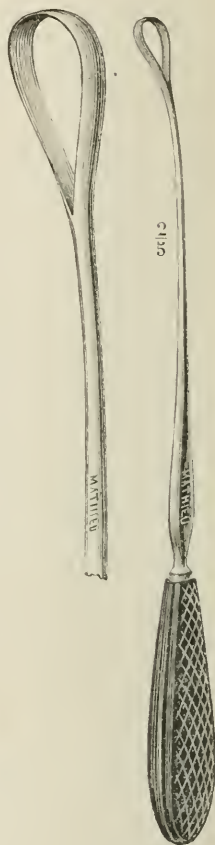


FIG. 8.

longer. When this was removed, the parts were left to cicatrize under carbolized warm-water injections, administered twice a day.

Mrs. E. has come regularly every two or three months for inspection. Five years have now passed away, and on examining the cervix uteri it would be impossible to say that it had ever been the seat of disease or of operation. By referring to Fig. 7, we see by what a slender pedicle it was attached. This was thoroughly excised. If it had been simply amputated, perhaps the result would not have been so satisfactory.

Epithelioma sometimes attacks the walls of the vagina, leav-

ing the cervix uteri intact. I have seen several instances of this sort.

In June, 1876, Mrs. A. came to see me, saying her physician told her she had some serious disease that needed immediate attention. She was about 45 years old, the mother of grown-up children, and had generally enjoyed good health. In the last few months, she had suffered from pain and hemorrhage during coitus, and was now rapidly declining from a wasting discharge, loss of appetite, and mental anxiety. She had the cachectic appearance so characteristic of malignant disease, and her *morale* was very bad.

The whole posterior wall of the vagina, below the cervix uteri, was thickly studded with epitheliomatous granulations for the space of at least two and a half inches square. They came down to within an inch and a half of the perineum, and extended laterally for about two-fifths of the circumference of the vagina.

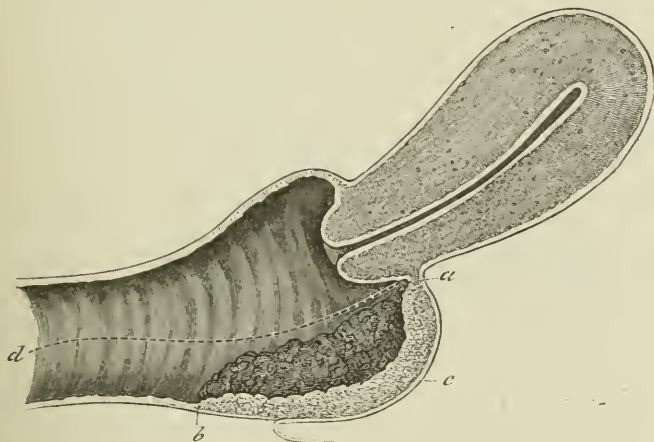


FIG. 9.

I was just on the eve of leaving home for Europe, and turned the case over to my son, Dr. Harry Sims. When the patient was placed in the left lateral semiprone position and the vagina widely dilated by atmospheric pressure admitted by the Sims speculum, the posterior wall of the vagina, from the cervix uteri *a* to the point *b* (Fig. 9), an inch and a half from the perineum, was seen to be thickly covered with epitheliomatous vegetations, extending laterally as already described. (The diagram fails to illustrate the extent of the disease laterally.) Under the influence of ether these were all curetted till the vagina presented the appearance of healthy structure denuded of its epithelial covering.

It was interesting to notice the tympanitic sound made by the curette as it was strongly scraped along the diseased surface, showing how near it was to the intestinal canal. Notwithstanding the

thinness of the membrane which at *c* separated us from the peritoneal cavity, the operation was finished precisely as it would have been done if there had been an inch of solid tissue intervening.

The removal of the epithelial growth was followed by the styptic cotton-wool (iron), and when it came away on the fourth day, the chloride of zinc was applied, precisely as we would have done it in the cervix uteri.

It remained four or five days, and when it was removed, a nice cup-shaped slough, nearly half the size of the palm of the hand, came away, leaving a smooth, healthy-looking surface which granulated and healed over in a fortnight, under the daily use of carbolyzed vaginal injections.

It might be supposed that there is danger of the slough extending through the posterior cul-de-sac into the peritoneal cavity, when the chloride of zinc is used in this way. But Nature guards against this seeming danger by throwing out fibrinous deposits that protect the peritoneal cavity. And it might also be supposed that there is danger of peritonitis from such treatment, but there seems to be little or none. For I have frequently applied the chloride against the posterior cul-de-sac, and always with impunity.

The sloughing and consequent cicatrization in this case necessarily shortened the posterior wall of the vagina. Instead of the posterior wall having the capacious dimensions shown by *a c b*, Fig. 9, it presented that shown by the dotted line *a d*.

Instead of a grand curve presenting itself when the patient was placed in the left lateral semiprone position, with the speculum introduced so as to allow of full atmospheric pressure, we now saw only the short, straight posterior wall as represented by the dotted lines in the figure. Some six or eight months after operation, two little suspicious-looking nodules presented themselves on the walls of the vagina on the right side, at the line of union of the anterior and posterior walls, which Dr. Harry Sims removed with the curette, treating them with the chloride of zinc in the usual way. After this he put his patient on the use of arsenic (Fowler's solution), as so strongly recommended by Drs. Washington L. Atlee and Lewis A. Sayre, and with the happiest effect. For Mrs. A. had had no return of the disease when I last heard from her; she no longer had any cachectic appearance; and she had gained flesh and strength, and considered herself a well woman.

How long this may last I cannot say. But she returns every three or four months to report herself. The timely and judicious operation by Dr. Harry Sims has certainly been the means of prolonging a valuable life. From the effects of the arsenic in this case and in some others in which I have used it, I am disposed to attach great importance to its alterative action in carcinoma.

As it can do no harm if administered in such a way and in

such doses as not to interfere with the healthy performance of the digestive functions, I would strongly advise its use after the local disease has been eradicated by surgical treatment.

Amputation of the epithelioma as now performed by most surgeons, or burning its exuberant granulations with the actual cautery, as did Jobert (de Lamballe), Nélaton, and their followers, are procedures that must give way to a more rational and more efficient method of treatment.

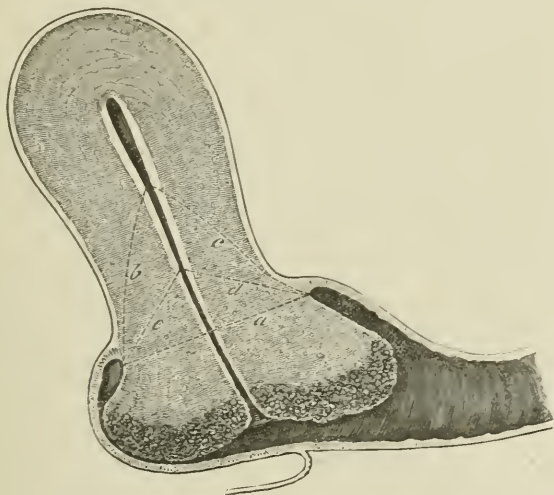


FIG. 10.

Mrs. C., aged about 41, regular, noticed a vaginal discharge in 1875, and consulted an eminent surgeon, who found a large epitheliomatous tumor growing from the neck of the uterus. The whole cervix was prolonged into this morbid mass. It was amputated just above the level of the vaginal junction with the cervix in June, 1875. In Jan., 1876, my friend, the surgeon who performed this operation, sent his patient to me. She was a large, fine-looking woman, exceedingly nervous, and very timid of all surgical procedures.

On examination I found the uterus mobile, the body slightly hypertrophied, and the cervix particularly so. The cervix was about two inches in diameter, was truncated, and projected nearly an inch beyond the level of the vagina. It had a rough and knobby feel; did not bleed; but its structure was friable and could be broken down with the finger nail.

Fig. 10 represents the relative size and shape of the cervix as it projected into the vagina. It would have been easy to amputate the disease at the dotted line *a*, with the *écraseur* or with the electro-

cautery. But this would not have eradicated all the diseased tissue. The patient placed in the usual position, most of the intra-vaginal portion of the disease was broken down and scraped away with the curette. The scissors were then resorted to, and diseased tissue was removed to the dotted line *d e*, about half-way up to the os internum. The remainder of the excavation *b c* to the os internum was done with the uterotome. The finger was used to detect any hardened diseased tissue, which was then hooked up with the tenaculum raised to the level of the vagina, when it was shaved off with the knife. This process is always a little tedious, for it is necessary to search out diseased structure and remove it piece-meal. We easily recognize it by the touch, for it feels hard and is found in irregular patches, as before said, sometimes as broad as the finger-nail, sometimes larger and often much smaller. In this case this abnormal structure was found all round the inner portion of the cervix and quite up to the os internum. Indeed, it was necessary to exsect by a circular sweep of the knife the entire os internum, taking it out in two semicircular pieces. When this was finished, the case was treated as already indicated, first with styptic iron cotton-wool to restrain hemorrhage, and after four or five days with the chloride of zinc. In this case the spring forceps were used once to seize a large artery, probably the circular, which gave no more trouble afterward.

A month after the operation, the depth of the uterus was just two and a quarter inches, instead of three and a quarter, as it was before the operation. Six months after the operation, some epitheliomatous granulations appeared in the neck of the uterus on the anterior portion, which were removed with the curette, and the excavation was treated with the chloride of zinc cotton-wool as before. About nine months after this, it was again necessary to repeat the curetting for a return of fungoid granulations, evidently epitheliomatous. After the first operation, Mrs. C. was put on the use of Routh's solution of the chloro-phosphide of arsenic, which is a valuable remedy, but I fear it is not equal to the Fowler's solution in such cases as this.

How often it may be necessary to repeat these little operations with the curette I cannot tell. But the relief of suffering and the prolongation of life depend upon the prompt manner in which we resort to this process. While the disease is confined to the cervix uteri, we have it under control, but when it passes to the body of the uterus, it soon becomes unmanagable, and goes on to a fatal termination. Notwithstanding all this, almost every case is susceptible of improvement by operation, unless it is *in extremis*.

The removal of sloughing tissue with the curette, to be followed by the chloride of zinc or bromine, will often add greatly

to the comfort of the patient, by relieving pain, arresting hemorrhage and the profuse ichorous discharge. If we can do only this for such hopeless cases, we are justified in the attempt.

Sometimes we see cases in a very advanced state, where the vagina is shortened and half obliterated, where the cervix uteri has been destroyed, where the uterus is immovably fixed, where the pain and the fetid discharge, conjoined with sleepless nights, were rapidly exhausting the vital powers; and yet by operative procedures, these were all arrested for a time, and life was somewhat prolonged and rendered more comfortable. This is the rule. But there are occasional exceptions.

In April, 1875, Mrs. B., aged 47, began to complain, and after three or four months, instead of consulting her physician, she determined to go abroad, and sailed from New York in August. She arrived in London in Sept., where she intended to remain two or three months, and then pass over to the Continent for the winter. While in London, about the first of October, she noticed for the first time a slightly fetid discharge from the vagina, and she was then induced to call in a physician. She had no idea that she was seriously ill, and was laying all her plans soon to go to the South of France for the winter. The physician examined her case minutely, and told her she was very seriously ill, and that she must take the first steamer for New York, and report herself to me on her arrival.

In twelve days she was in New York, and I saw her soon afterward.

Six months previously she was in good health, and now she was completely broken down. She had latterly lost a good deal of blood; now suffered much pain, enough to require the use of opium; and the profuse, fetid, ichorous discharge was exhausting her strength very rapidly.

I found the vagina half obliterated, only half as long as it should be; the os and cervix uteri destroyed; the body of the uterus lying across the pelvis, and immovably fixed in a right line with the outlet of the vagina, and full of dead matter, which produced the fetid, ichorous discharge. Nothing could be more hopeless of cure. Notwithstanding all this, I advised Mrs. B. to submit to operation for the removal of the sloughy matter from the cavity of the uterus, with the hope of moderating the pain, and of arresting the wasting discharge, and thereby of prolonging life. For, to a mother with a family of young children, a few months of life without great suffering is a boon to be coveted.

The cavity of the uterus was cleared of all dead and removable tissue with the curette, and the case was treated as already described. In this case I used the bromine according to the formula of Dr. Routh, one part to ten of alcohol.

Mrs. B. suffered so much from pain of a neuralgic character be-

fore and during the treatment that I was obliged to give her large doses of quinine, and also of morphine to quiet the pain. She went home in a month greatly relieved. She had scarcely any pain and she was not obliged to take opium. The fetid discharge ceased; she was made comparatively comfortable, and all feter was kept at bay by the constant use of warm carbolized vaginal injections. The operation did all that was expected, and I felt satisfied with its results. But Mrs. B. died about a month or six weeks after her return home, and like many of these cases, death came suddenly and mercifully by uremic poisoning.

I have given this case as one of the most hopeless, and yet the condition of the patient was greatly ameliorated by the operation. And for such amelioration the risks of the operation are, I think, justifiable.

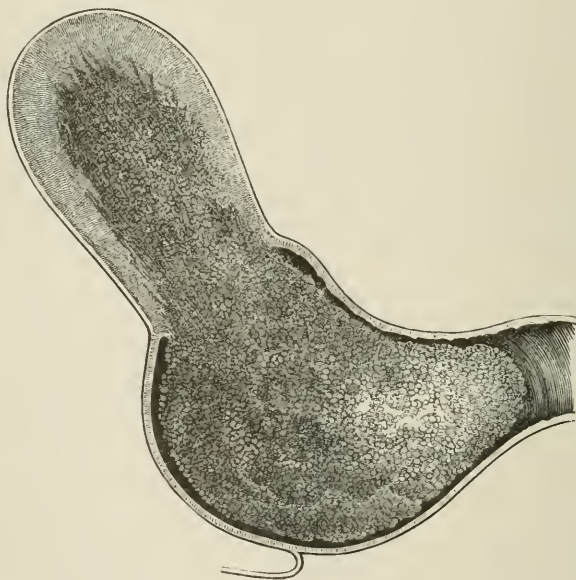


FIG. 11.

The most unfavorable cases for operation are those in which the epitheliomatous granulations penetrate deeply into the cavity of the uterus, and which can be easily removed with the curette. Fig. 11 represents just what I mean. In such cases the mass of epithelioma projecting into the vagina is always easily broken down with the curette. There is but little work for seissors, and none for the knife. The granulations in the

body of the womb are removed in great masses with facility, and unfortunately, in all such cases, the hemorrhage will be profuse, and if the operator is not prepared to arrest it promptly, it might become alarming and even dangerous. It is always of a bright arterial color, and seems to pour out from a thousand little arteries; for doubtless each filament of granular matter has its arteriole hypertrophied according to the nutriment necessary for fungoid growth.

We should always be prepared for hemorrhage under all circumstances. And before we begin to operate, we should have at least three or four whalebone applicators, ten or twelve inches long, with the small end well wrapped with styptic iron cotton-wool of sufficient length to reach quite to the fundus uteri. If the hemorrhage is very profuse, the granulations are to be removed with great celerity, and the whole cavity of the uterus quickly tamponed by pushing in one whalebone applicator armed with the styptic cotton, then another by the side of the first, and then a third, and a fourth if necessary. Thus we may have three or four whalebone instruments protruding from the vagina all at once. The hemorrhage will now be staunched, and we remove one whalebone applicator, leaving the styptic cotton-wool in the cavity of the uterus. Then the second, third, and fourth, if there are so many, may be taken away, and if there is still some fresh blood oozing by the side of these uterine styptic plugs, we arm the whalebone with a thin layer of the styptic cotton, and pass it in by the side of the others, and then another if necessary, till we are sure there can be no more bleeding. When we are sure of this, then we tampon the vagina with the styptic cotton-wool, so as to insure against the slipping of the plugs from the cavity of the uterus. When the uterus is thus tamponed, we must soon begin to remove the tampon from the lower part of the vagina, for there is always danger of septic poisoning when any considerable quantity of extravasated blood is shut up in the uterus with iron or any other styptic. It undergoes decomposition rapidly, and as it lies in contact with a largely denuded surface, it is placed under the most favorable conditions for a rapid septicemia.

We must, therefore, get this tampon out of the cavity of the uterus as soon as possible. And if in even twenty-four hours we

find the pulse, and particularly the temperature running up, we have no time to lose, and the tampon must come away even at the risk of inducing hemorrhage. Fortunately under these circumstances, we seldom have hemorrhage after removal of tampons.

During the operation the hemorrhage is profuse, and we are obliged to resort to heroic means to arrest it. Once arrested, we begin to fear the danger that may arise in consequence of the means adopted for this purpose; and as soon as it is safe to do so, we remove the tampon entirely. Thus we see that what was absolutely essential to saving life to-day, may to-morrow become the ready means of destroying it. The judgment of the operator must then be as quick to detect the danger and ward it off in the latter instance, as it was in the former.

We often see uterine cancer in such an advanced state that we can do nothing but give anodynes to relieve pain, and take precautions to insure cleanliness. Each of these is of prime importance. Pain may be borne for a while; but antiseptic injections cannot be dispensed with. For they are essential, not only for the comfort of the patient, but for that of the family and attendants.

A few years ago a young lady came a great distance to ask me to go and see her mother who was dying of cancer of the uterus. She had been for months her mother's nurse. She remained about two hours in my house waiting for me. Her clothing was so saturated with the odor of intestinal mortification that, in this brief period, it permeated every room in the house. It was in December; the ground was covered with snow, and it was very cold. To purify the atmosphere of the house, it was necessary to ventilate and disinfect it thoroughly. When I arrived at the home of the patient the next day, although the temperature was 16° F., the cancerous odor was encountered in the open piazza, and in the house it was something beyond description. The patient was 40 years old, and had had good health till about twelve months before. She was comparatively rich, had always enjoyed the comforts and luxuries of life, and was now dying in an atmosphere polluted with an autogenetic poison, compared with which the air of the dissecting room is sweet.

The case was unique in every sense; not only in its disagreeable penetrating effluvia, but in its anatomico-pathological features. The vagina was intact and of enormous proportions. The uterus was entirely destroyed; and in its stead there was a cavernous pouch, the size of the closed hand, extending some five or six inches up

among the intestines in the direction of the umbilicus. It was about ten inches from the ostium vaginæ to the fundus of this pouch. There was no induration of tissue to be found, simply, I presume, because a rapidly sloughing process was going on without any reparative effort at cicatrization. For the same reason there was but little pain or suffering, and the patient had taken but little morphine. Great pain in cancer is usually allied with indurated tissue.

In a case like this, if we cannot save life, we can at least purify the atmosphere. By placing the patient in the left lateral semi-prone position, and using a large (Sims) speculum, I could see to the very top of the cavern, which was full of loose, grayish, sloughy tissue, easily removed by wiping it out with sponge probangs.

I then attached a gum-elastic catheter No. 12 to a Davidson syringe and by passing it to the fundus of the sloughing pouch, its surface was cleaned by complete ablution with warm disinfectant washes.

In a few days the atmosphere of the house was rendered comparatively pure by the free use of carbolized injections.

We should never allow such a state of things to exist as was found in this case. Sometimes it is justifiable to submit advanced cases of uterine cancer to operation by the curette, merely for the purpose of removing the sloughing debris from the cavity of the uterus, and thereby of preventing fetor. A cancer without a slough has no odor. Dead matter in cancer produces fetor, and its absorption produces the cancerous cachexia. We are, therefore, doubly justified in scraping it out whenever the patient is strong enough to take an anesthetic.

The ravages of uterine cancer are sometimes fearful.

I have seen two cases where cancer had invaded the body of the retroverted uterus, which then became adherent to the rectum and by ulceration between the two, a fistulous opening was made, by which feces passed involuntarily through the body of the uterus and the vagina. To these horrible complications we often see added involuntary loss of urine through a sloughing of the base of the bladder.

Under these circumstances, the sooner the poor sufferer dies the better, both for herself and her family.

Pain is not commonly an attendant on cancer in its early stages. It belongs to a later period, characterized by inflammation and its products. But come when it may, it soon becomes a prominent symptom demanding prompt attention.

Whenever it prevents sleep, or by its prolonged continuance

exhausts the nervous system of the patient, we must control it. Opium in some form is the best of all anodynes in this disease. We may give laudanum by the rectum or the mouth, or we may give some of the salts of morphia by the mouth or hypodermically.

Some patients will prefer McMunn's elixir of opium; some Squibb's denarcotized laudanum, and others chlorodyne. When the patient once resorts to opium, she will be obliged to continue it during the remainder of her brief existence. Though capable occasionally of doing mischief, it is in the majority of cases a divine gift.

In 1873, a lady, aged 36 years, the mother of four children, the youngest being two years old, came to me for advice, merely to please her sister, who insisted that her altered appearance indicated some latent disease. She herself was not conscious of being out of health. She ate well, slept well, was free from pain, menstruated regularly and normally, had no leucorrhea, and all her functions were healthily performed. There was no history leading us to suspect disease in any organ, and there was no suspicious family history.

But on examination I found the cervix uteri degenerated into an epitheliomatous mass about two inches across and projecting into the vagina for an inch or more. Her husband had sailed a few days before for Europe, to be absent two months. I told her frankly that her disease was so serious that we could not wait two months for his return; that an operation was necessary; and she consented to have it done at once. I called Dr. Emmet in consultation; he recognized the gravity of the affection, and said that she could not afford to lose a day. The operation of exsecting the diseased mass was performed, and the parts healed up. About six months afterwards, the disease reappeared, and the operation was repeated and followed up with the chloride of zinc. Cicatrization was complete, but from this time on her sufferings became so acute as to require the daily use of morphine hypodermically. She lived about a year after this, exempt from all evidences of cancerous disease, except pain. There was no ulceration, no hemorrhage, no vaginal discharge whatever, but the neuromatic pain in the cicatrix following the operations was so agonizing that we were obliged to give morphine hypodermically in such large doses that it entirely destroyed all appetite, and my patient, after nearly twelve months of terrible suffering, died of starvation as the result of morphinism.

It is only when the uterus becomes fixed in the pelvis by the exudation of organized lymph, that great pain is experienced. The pain is evidently the result of an amalgamation of the nerves of the parts with the products of inflammation

which produce a neuromatous mass. The pains are frequently of a periodic character, often benefited by quinine, and as before said, always demand the use of opiates.

We cannot account for severe pain supervening during the progress of this disease, except on the principle of the neuro-ma. And we find in the inflammatory induration of tissue all the elements necessary to constitute this abnormal structure.

In 1876, I attended the meeting of the British Medical Association at Sheffield, and read before the Obstetrical Section a paper on my method of operating for epithelioma of the cervix uteri; after which I was invited by Dr. Watson, of Peniston, to operate the next day on a case of his. The patient was about thirty-three years old. The upper half of the vagina was filled with a large cancerous mass that bled easily on touch. It involved the greater part of the cervix, and was about the size of a small Sicily orange. I was assisted by Dr. Kidd, of Dublin, and by my countryman Dr. Horatio R. Storer. It was agreed that we should preserve samples of diseased tissue from different parts of the epithelioma for microscopical examination. After breaking down and cutting away the bleeding granular mass that filled the vagina, we found diseased tissue extending up the cervix. It even extended to and around the os internum. The cervix was removed conically up to the os internum, and as the peculiar indurated cancerous tissue was found encircling the os internum, it was removed in two semicircular pieces. There then seemed to be no more cancerous tissue to excise, and the excavated cervical cone was filled with styptic (iron) cotton-wool, and the case treated as before described.

On the following day, specimens of the tissue removed were submitted, with the history of the case and operation, to the obstetrical section of the British Medical Association, and these were referred to Dr. James Ross, of Manchester, for microscopical examination.

The consultants did not think it necessary to submit portions of the tumor projecting into the vagina for examination, as there could be no question about its nature. The question to be solved was this. I insisted that the indurated gristly and gritty feeling tissue removed from the cervix and around the os internum was of malignant nature. If it was, then my method of exsection was the proper one; if not, then exsection of the indurated abnormal tissue of the cervix was not necessary. To this end, two specimens were submitted to the section and referred to Dr. Ross.

1st. Indurated tissue from the supravaginal portion of the cervix, and

2d. Indurated tissue from the circumference of the os internum.

The following is Dr. Ross's report.

To the President of the Obstetrical Section of the British Medical Association.

SIR:—Dr. Thorburn having handed to me two parcels containing

fragments of tissue; and having, along with Dr. Atthill (President of the section), explained that those in No. I. were removed by Dr. Marion Sims from the cervix uteri, after he had previously taken away a mass of what was supposed to have been epithelioma, and that those in No. II. were removed by him from the circumference of the os internum uteri, I have to report that the microscopical appearances obtained from an examination of these specimens are as follows:

No. I.—The fragments of tissue in this parcel contained several hard nodules which felt like shot when pressed between the finger and thumb. Sections of these nodules showed that the healthy tissue was infiltrated by oval, nucleated cells about the $\frac{1}{700}$ of an inch in diameter. These cells were generally arranged in a circular manner, so as to form “nests,” but were not so compressed as to have lost their distinctness of outline. These cells were also observed, although they were not so numerous, in the tissue surrounding the nodules, but sections were obtained from the tissue at a distance from the nodules, in which no cells could be seen.

No. II.—In some of the sections made from the tissue in this parcel, no nucleated cells were met with, but in one portion, where a nodule was felt between the finger and thumb, distinct “nests” of nucleated cells were observed.

(Signed)

JAMES ROSS.

MANCHESTER, August 4th, 1876.

Dr. Ross's report confirms others that I have had made, but I give his alone, because he is recognized as one of the most careful and accurate microscopists in England.

His report shows that the tissue removed from the cervix uteri was infiltrated with “nests” of abnormal structure.

The inference is clear, that this must be wholly removed to insure a successful result. But it may well be asked: “Is there no immediate danger from these seemingly heroic excisions?” I am amazed at the impunity with which they are generally performed. But they do sometimes terminate fatally.

I well remember a case sent to me in 1873 by Prof. Loomis and Dr. Osborn, in which the cavity of the uterus was full of epitheliomatous granulations ready to break down. They were rapidly scraped out with the curette. The bleeding was unusually furious, but was promptly arrested by tamponing the uterus with iron cotton-wool. The next day, the patient had a chill, and in three days she died of peritonitis.

Up to the time of my leaving New York, in 1877, this was the only case of the sort that had terminated in this way in my

hands. And I had performed the operation very often. In 1872, I lost a case in the Woman's Hospital about ten or twelve days after operation. She died of some intercurrent affection which I cannot name, because I have not been able to obtain the notes of the case.

In March, 1878, I made a visit to Vienna for a fortnight. While there, I was invited by Prof. Späth to show him my method of exsecting epithelioma of the cervix uteri. For the notes of the case I am indebted to Dr. Josef Kucher, Prof. Späth's assistant.

"Magdalena Czermak, widow, aged 45, menopause 15 months ago; six months ago (Oct., '77), began to have hemorrhages from the uterus, latterly very profuse. On examination the portio vaginalis was found to be degenerated to a neoplasma the size of a goose egg, with an uneven surface which bled easily. The neoplasma extended to the boundary line of the vagina without having attacked the vagina. On the 10th of March, the neoplasma was removed by Dr. Marion Sims with his curette knife and scissors. As the neoplasma extended into the body of the uterus, the greater part of the uterus was removed, leaving only the peritoneal covering. Bleeding was trifling. The bleeding of three arteries was instantly arrested with three hemostatic forceps. The removed mass (medullary carcinoma) weighed 90 grams. The resulting cavity was filled with iron cotton, and the vagina with carbolized cotton. The latter was removed next morning, and the former in the afternoon. The patient complained of pain in the back after the operation, and morphine was given hypodermically, after which the patient vomited several times. When the tampons were removed, the pain and vomiting ceased. The vagina was frequently washed out with carbolized warm water. On the 12th, she had a chill; on the 15th, another. The abdomen was always flat and soft; nowhere tender. On the 15th, at 8 P.M., there was a sudden and violent hemorrhage, and to arrest it the uterus and vagina were tamponed with iron cotton. On the 16th, at 4 A.M., there was another violent hemorrhage, which was again controlled with iron cotton. Soon after this, the patient became collapsed, and died at 7.30 P.M.

The post-mortem was made by Dr. Chiari, about 14 hours after death.

Of the uterus, only the top and the upper two-thirds of the corpus were remaining; the other portion of the uterus, where the cancerous mass was, had been removed almost to the peritoneum. This cavity, as well as the vagina, was filled with iron cotton. The posterior portion of the cervical cavity was perforated by two openings which communicated with the peritoneal cavity. There was also a perforation the size of a pin's head into the utero-vesical cavity. The edges of the openings were escharred by the iron.

There was no inflammation of the peritoneum. In the left ovary there was a recent corpus luteum the size of a pea. Universal anemia to a great degree.”—

I saw this case at 6 P.M. on the 16th, just two hours before the first hemorrhage occurred, and in my note-book is the following entry :

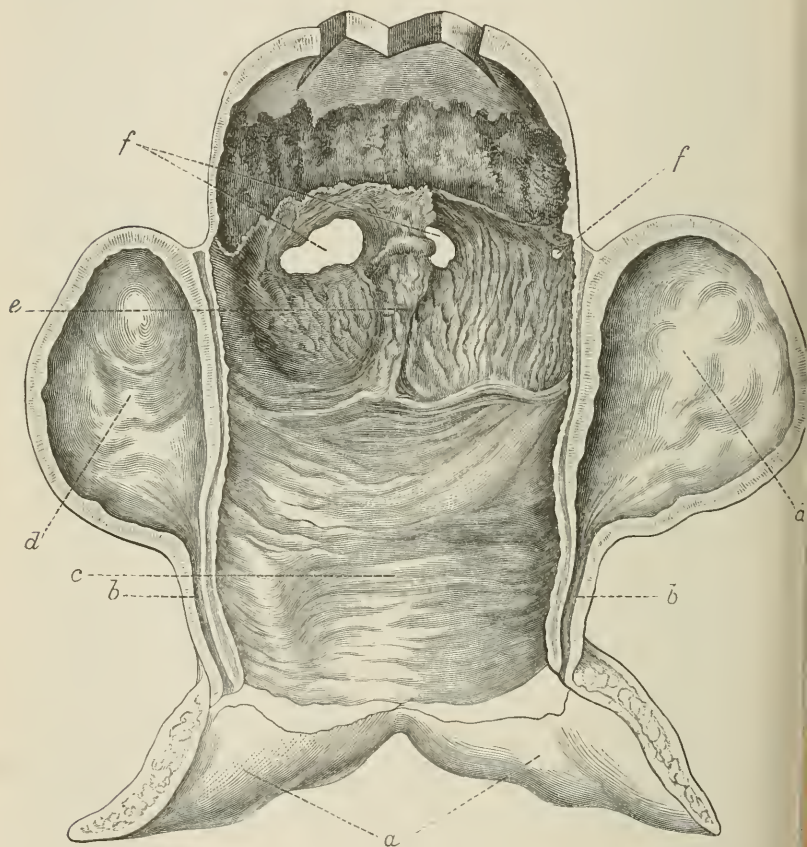


FIG. 12.

“She looks bright and well. Considered out of all danger. Pulse 88. No pain; no nausea; eating and sleeping well.”

Dr. Heitzmann made a drawing from Dr. Chiari's preparation of the uterus, vagina, and bladder, which is represented by Fig. 12.

The bladder, anterior wall of the vagina, and of the uterus were split open and laid back as represented in the woodcut. The two large openings near the junction of the cervix and the body of

the uterus represent perforations through the posterior wall into the Douglas peritoneal pouch; the smaller one on the right passed anteriorly into the utero-vesical pouch. These perforations were the result of the sloughing process. The uterus was excavated quite to the fundus as shown in the diagram.

I just escaped performing a brilliant operation in this instance. The idea of it unfortunately did not occur to me till an hour after the operation was finished. This is the first case in which I have removed almost the whole of the uterus to its outer or peritoneal covering. If I should ever have a similar case, I would hook tenacula into the fundus; pull it down so as to get a good grasp on it with volsella, and then it would be easy to wholly invert the organ and remove it entire, as we would in an ordinary case of irreducible inversion.

Prof. Böhm, superintendent and surgeon to the Rudolf Hospital, also invited me to operate on a case of epithelioma of the cervix uteri in his wards, and the following notes have been furnished me.

“ Marie Punick, aged 41, the mother of two children, each born in the eighth month of pregnancy, enjoyed good health till about three months ago. Her menses had always been regular, lasting two days, till the last of December, '77, when she was taken with metrorrhagia and with pain which compelled her to enter our hospital, where we found her in the following condition:

She is well formed and well preserved, but has a pale-yellow tint of the skin. The pulse and temperature are normal.

Nothing abnormal in the thoracic organs. The uterus is a little enlarged and mobile. The vaginal mucous membrane shows great anemia. On the anterior lip of the uterus there is a tumor the size of a large nut, which is hard to the feel and knobby on the surface. On the right edge of the posterior lip, there is a small nodosity.

[Fig. 13 is from a drawing taken from nature by Dr. Heitzmann the day before the operation.]

The operation was performed by Dr. Marion Sims, on the 19th of March, 1878.

The patient took chloroform. At night the pulse was 93, and temperature 37° C. She complained of headache and had some bilious vomiting. The abdomen was somewhat sensitive to the touch. She got ice and opium.

20th.—Pulse, 115; temperature, 37.6° C.; tampons removed; vomiting continuous; abdomen slightly tympanitic.

21st.—Pulse, 112; temperature, 37.4 ; vomiting more frequent.

22d.—Pulse filiform; lower extremities cold; abdomen tympanitic and very tender to the touch, and at midday she died.

Post-mortem.—Body of slightly jaundiced tint; the head somewhat edematous; the trachea full of bilious mucus, same in larynx and pharynx; thyroid gland somewhat colloid. Both lungs adherent at summit, otherwise free. Parenchyma pale and edematous. In the pericardium a few cubic centimetres of reddish serosity. Heart of normal size, well contracted. In the abdominal cavity there were about 500 cubic centimetres of sero-purulent fluid. The peritoneum is injected and covered everywhere with layers of fibroplastic exudation. The liver is somewhat smaller than it should be, firm and granular.

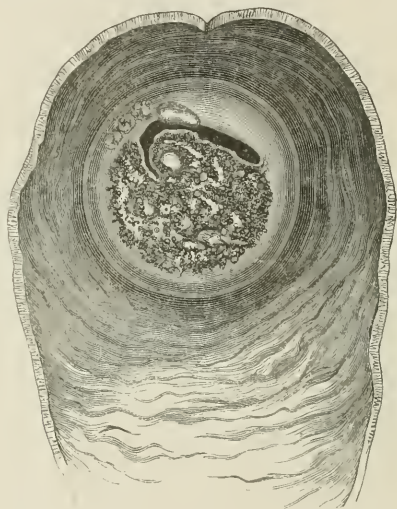


FIG. 13.

The spleen is fifty per cent larger than it should be. The kidneys pale. The stomach and intestines a little distended. In the bladder there was a small quantity of clear urine. The uterus and its annexes were intimately adherent to the surrounding parts. The two Fallopian tubes were dropsical. The ovaries are normally cre-nated. In the left there is a cyst the size of a nut; its contents sanguinolent. The os tinæ, the neck of the uterus, and the lower part of the corpus uteri were wanting. In their place there was a cavity, now suppurating, which is limited by the peritoneum and by a thin muscular layer of the uterus. This cavity was discolored by sesquichloride of iron used in the tampon. It communicated with the peritoneum by several little openings the size of a pin's head, leading to the Douglas cul-de-sac. These little perforations were in the posterior wall of the cervix, about two centimetres above the level of the posterior wall of the vagina, and near the deepest point of excavation. Around the perforations the peritoneum was stained with the sesquichloride of iron. By minute examination

(microscopically) of the pelvic lymphatic glands, we found some of them containing pus, but nowhere did we find any trace of cancer."

Fig. 14 represents the initial step of the exsection.

We seldom see an epithelioma of the cervix uteri at such an early period. Judging from its history and from its appear-

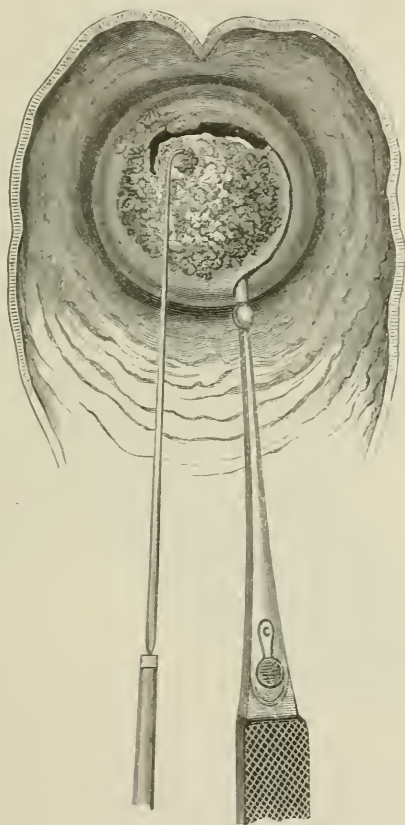


FIG. 14.

ance, it had existed barely three months. The operation was very easy and was quickly done. There was but little bleeding. It was just the case in which we could promise a certain cure. Everything was favorable to success: the age and condition of the patient; the limited extent of the disease; and the thoroughness of its removal, all justified me in giving a posi-

tively favorable prognosis. I was therefore greatly surprised when I visited my patient the next morning to find her in a critical condition.

The accompanying diagram gives a good idea of the extent of the disease. Anteriorly it reached to the os internum. The posterior segment of the cervix was a little more diseased than is shown in the cut. All the diseased structure was removed with the knife aided with the tenaculum. The sense of touch was the guide. Wherever we find gristly tissue, it is

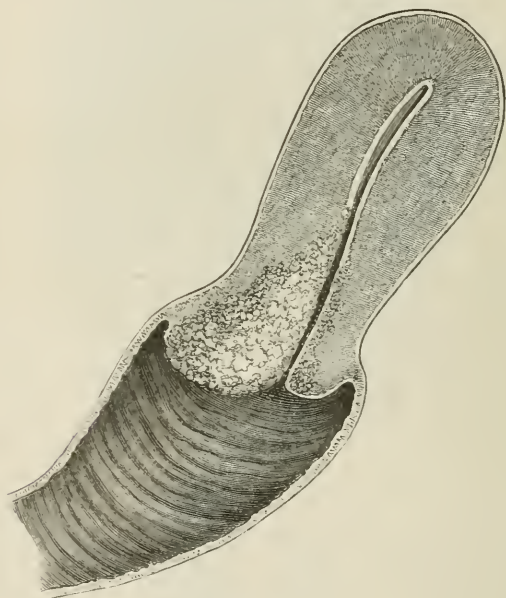


FIG. 15.

to be hooked up with the tenaculum and cut out. This process was here followed up till the whole cervix was excised, leaving only the peritoneal covering lined with a thin layer of uterine tissue.

I also operated for Prof. Salzer on a case of epithelioma of the cervix uteri. His case was most unfavorable for operation.

This diagram, from a drawing made by Dr. Heitzmann, tells the story of its extent and relations. The anterior lip of the os tincæ was prolonged into a large epitheliomatous tumor, bleeding easily

on touch. The posterior lip was destroyed, and its place occupied by fungoid granulations which extended up into the cervix, and down on the posterior wall of the vagina to within two inches of the perineum. The diagram is placed upside-down, to show the parts as they would be seen in the left lateral semiprone position, with the Sims speculum.

With the curette I removed the granulations from the posterior wall of the vagina. Part of the projecting mass from the anterior portion of the cervix was removed with the curette; the remainder with scissors. After this was cut away to the level of the vagina,

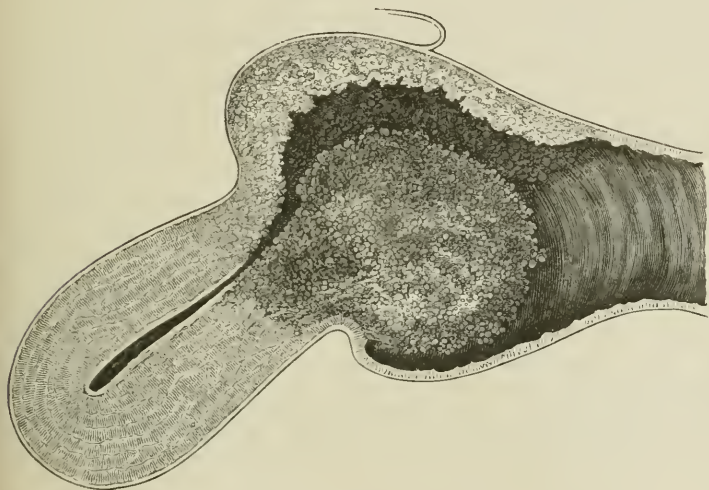


FIG. 16.

the anterior portion of the cervix was hooked with a tenaculum, pulled forward, and then I began to exsect it with the uterotome. While I was cutting away this cervical tissue, a little glistening fatty body, about the size of a bean, floated out on the seat of operation which I at once recognized as a bit of omental or mesenteric fat. Then I knew that the peritoneal cavity had been opened, and by passing my finger in I discovered that the posterior vaginal cul-de-sac was wholly torn loose from the cervix uteri. I thought at first that I might possibly have made the opening with the knife. But on minute investigation it was seen that this hypothesis was out of the question, as the knife could not have passed beyond the canal of the cervix, and as the vaginal attachment was torn loose from the posterior portion of the cervix in a manner to correspond exactly with its semicircular border. This accident was produced by the distal end of the speculum, which, pulling the fornix vaginae back too forcibly toward the rectum, ruptured its already weakened tissue.

My first idea was to cut away all that portion of the posterior vaginal wall that had been the seat of disease, and then to pull the uterus forward, and unite the two by suture. But by passing one finger in the rectum and another along the posterior wall of the vagina, I discovered that the denuded or diseased portion of the vagina extended forward along the rectum for at least an inch and a half. So I could not carry out my original plan, and was obliged to unite the cervix uteri to the border of the vaginal cul-de-sac, from which it had been torn. I then passed four silk sutures through the posterior border of the cervix and the corresponding portion of the lacerated vaginal cul-de-sac. Two or three ounces of blood had run into the peritoneal cavity through this accidental opening. The distal ends of the sutures were thrown up over the hip and held there; the proximal ends were pulled forward over the anterior wall of the vagina and held; then the middle portion, extending antero-posteriorly across the wound, were pulled apart so as to permit the easy passage of sponge probangs into the peritoneal cavity; then a sponge probang was forcibly pressed on the bleeding cervix to control the oozing of blood, while the peritoneal cavity was thoroughly cleaned out by rapidly passing in one sponge probang after another. After a little while the sponge probangs were passed in and drawn out dry and clean, then the sutures were quickly pulled, and the utero-vagino-peritoneal opening was closed, and held so by tying each suture separately. The ends of the sutures were left long and hanging from the vagina. The operation was then finished just as if this accident had not occurred. The excavated cervix was filled with iron cotton-wool, and the vagina was tamponed as usual. The next morning, the tampons were removed, and the patient speedily recovered from the operation, and in due time left the hospital.

My Vienna experience was most unfortunate, but most instructive.

1. The first patient (Prof. Späth's) died of secondary hemorrhage six days after the operation. The hemorrhage resulted from a slough in the posterior portion of the cervix, which extended through into the peritoneal cavity at the time that the patient was thought to be convalescent and out of all danger.

2. Prof. Böhm's case at the Rudolf Hospital was unusually favorable for operation, and yet she died of peritonitis the third day after operation. Post-mortem showed that the peritonitis was due to minute perforations through the posterior portion of the cervix which communicated with the peritoneal cavity. What caused these little perforations, and what caused the larger perforations in the same locality in Prof. Späth's case?

They were produced in each case by the same cause.

I (and my son Dr. Harry Sims) had performed so many operations of this kind, and with such impunity, that it did not occur to me that anything but good could come from forcible tamponing. I looked upon it as powerful to control hemorrhage and as dangerous only in producing septicemia if the tampon were allowed to remain too long *in situ*. And this we could easily control by removing it and using antiseptic injections.

In Prof. Späth's case, the lower part of the uterus was almost wholly exsected, leaving only a membranous bag composed of but little more than peritoneum. This membranous bag was too forcibly packed with iron cotton-wool, and its circulation was thereby obstructed, and three sloughy openings, two of them large enough to admit the end of the finger, were the result.

In Prof. Böhm's case, the little perforations through the posterior wall of the cervix into the peritoneum were made in like manner by forcible tamponing. In this case there is every certainty that the tissue yielded at once to the packing of the tampon.

In each and in every case, the force exerted in strongly tamponing the cavity of the excavated cervix would inevitably be expended against the posterior wall of the cavity, and not against the anterior which is out of the line of action.

In the first case, the forcible impaction of the excavated cavity produced a slough at the point of greatest pressure.

In the second case, the forcible impaction of the excavated cavity produced an immediate laceration of tissue at the point of greatest pressure; each case terminating fatally, one by secondary hemorrhage, the other by peritonitis.

In neither of these cases was the bleeding during the operation profuse; and in neither would death have occurred if the tampon had not been used.

An important lesson is thus sadly and indelibly impressed upon my mind, and I wish others to profit as well by it.

3. The accident that occurred in Prof. Salzer's case, the disruption of the posterior wall of the vagina from the cervix uteri was unavoidable. No one was to blame for it. The vagina at its uterine attachment was so weakened, and so nearly

destroyed by cancerous degeneration that it required but slight traction to tear it asunder.

It was fortunate that this accident was promptly and thoroughly repaired.

The following inferences seem to be deducible from the facts set forth in this paper.

1. Do not amputate or slice off an epithelioma of the cervix uteri on a level with the vagina, whether by the *écraseur* or the electro-cautery.

2. Exsect the whole of the diseased tissue, even up to the os internum if necessary.

3. Arrest the bleeding, when necessary, with a tampon of styptic iron or alum cotton-wool.

4. Be careful not to apply the tampon with such force as to lacerate the excavated cervix uteri.

5. When the styptic tampon is removed, cauterize the granulating cavity from which the disease was exsected with chloride of zinc, bromine, sulphate of zinc, or some other manageable caustic capable of producing a slough.

6. After the removal of the caustic and the slough it produces, use carbolized warm-water vaginal douches daily till cicatrization is complete.

7. After the cure, put the patient on the use of arsenic as a protection against the cancerous diathesis, and urge the importance of examination every two or three months for the purpose of detecting the recurrence of disease.

8. Then if fungous granulations or knobby protuberances not larger than a pea are found, lose no time in removing them; and treat the case afterward with caustic just as in the first instance.

9. Almost every case may be benefited by operation, even when there is no hope of giving entire relief.

Dr. Reamy, of Cincinnati, performs this operation by exsection and not by amputation. We both worked out this method of operating about the same time independently of each other, and we both published our results about the same time. I have always exsected the cervix piecemeal. But Dr. Reamy often takes it out with scissors in one solid piece, reaching quite up to the os internum.

During a visit to Koeberle in September, 1877, he informed

me that he now never amputates the epitheliomatous cervix uteri; but he exsects it quite up to the os internum if necessary. He operates in the early stages of the disease, and uses Paquelin's thermo-cautère, removing a conical plug from the cervix. Dr. Wilson,¹ of Baltimore, has recently performed this operation in the same way, and he has proven that the Paquelin cantery can be successfully used in the Sims position with the Sims speculum. This is one of the most important improvements as yet made in this operation.

Mr. Spencer Wells informed me to-day (May 5th, '79), that he has successfully exsected the cervix uteri for incipient carcinoma with the Paquelin cantery. But the disease is now re-appearing.

I have no prejudices in favor of my own plan. But we can by the sense of touch follow up the diseased tissue and remove it all; while by the cantery there will always be a doubt whether we have done this or not. It is possible that the actual cantery may be preferable to the potential after the diseased tissue is exsected. The point that I insist on is, that the disease should be exsected and not merely amputated, whether this be done with cutting instruments or the actual cantery.

I have no experience with Prof. Schroeder's method of removing the entire cervix, nor with Prof. Freund's operation of extirpating the whole organ for epithelioma of the cervix. But the medical mind in my own country and in Germany is now so actively concentrated on this subject that it must eventually result in improved methods of treatment.

¹ Maryland Medical Journal, Dec., 1878.

THE DIAGNOSIS AND TREATMENT OF OBSTETRIC CASES BY
EXTERNAL (ABDOMINAL) EXAMINATION AND MANIPULATION.

BY

PAUL F. MUNDÉ, M.D.,

Obstetric Surgeon to Maternity Hospital, New York.

“Malgré ce laps de temps écoulé, le
sujet peut être considéré comme neuf.”
--*Bulletin de l'Acad. Impér.*, Tome
XXV., p. 157.

SEVEN years ago, towards the close of a prolonged stay in Vienna, I conceived the project of preparing an exhaustive paper on the various modes and procedures by which abdominal examinations and manipulations are conducted during pregnancy and labor, and the numerous and different conditions in which their employment is beneficial or necessary. Perhaps I should scarcely have thought of writing on a practice so well known to all German obstetricians and physicians, and so universally taught and exercised in Germany, had I not frequently seen in the lying-in wards in Vienna, as well as during my previous three years' term of service as clinical assistant to Scanzoni in the Maternity Hospital at Würzburg, how little the young American medical graduates, even from our best schools, know of *practical* obstetrics, and particularly of external diagnostic and therapeutical manipulations of pregnant and parturient women. That this inexperience is not confined entirely to our young practitioners was proved to me by a remark made by an American physician, an intimate friend of mine, and one who had seen a large number of obstetrical cases in this country, who, while witnessing the ease and rapidity with which the period of gestation and the fetal position were ascertained by external examination in a number of cases in the reception wards of Prof. Spaeth's clinic at Vienna, expressed his delight at the procedure, and surprise that it is so little known and practised in the United States. I was reminded by this remark of the entire absence of any mention of this practice during my own studies at the Yale and Harvard Medical Colleges, and of

my sad ignorance in this respect on arriving in Europe after my graduation, which facts fully corroborated my friend's observation. As for ever having seen the manipulation, that possibility was out of the question, for it is still one of the great and universally acknowledged defects of American medical instruction (and one, as we all know, difficult to remedy in our land of universal equality) that but an extremely small proportion of our medical students have occasion to examine, perhaps not even to witness, an obstetrical case, and consequently the majority learn this most important branch solely from their text-books. This has been my own experience, as it undoubtedly has also been that of all those students who were not so fortunate as to enjoy the exceptional advantages offered them as internes in the lying-in wards of some of our large hospitals. So far as I have been able to learn, however great the advances in the other branches of medical instruction have been, in the department of practical obstetrics there has been but little improvement since I left my Alma Mater thirteen years ago. A simple labor, or a forceps or other operative case seen at a distance from the benches of an amphitheatre, or a chance confinement case in dispensary practice, are something, it is true, and better than nothing, but can scarcely be called *practical instruction* in obstetrics.

While in Vienna, I received from my friend, Dr. William L. Richardson, of Boston, a pamphlet on "External Manipulation in Obstetric Practice" which he had read before the Mass. Med. Society in June, 1871, and in which he briefly describes the practice, and deplores the "little attention which has as yet been paid to the subject in this country," and warmly recommends it to the profession.

On looking over the numerous German and other European obstetrical authors then at my disposal, I found that few make more than cursory mention of the details of abdominal manipulation, Scanzoni¹ and Schroeder² giving the longest and clearest accounts I was able to find. The journal literature on the subject I also discovered to be by no means extensive and generally but little known. This fact may, at first sight, appear curious and unfavorable to the method, but it can readily be explained, when we consider that it is taught at all medical

¹ Geburtshülfe, Vol. I., 1867.

² Geburtshülfe, 3. Auflage, 1872.

schools in Germany as a matter of course, and that familiarity in exercising it must be acquired by practice, and cannot be learned theoretically.

Of American authors I was able to ascertain only four who had written special essays on this subject. Prof. M. B. Wright, of Cincinnati,¹ Whittaker,² John Drury,³ and Wm. L. Richardson;⁴ all of whom, with the exception of the last named, referred principally to the manipulation for the purpose of version, hardly mentioning its *diagnostic* value.

Bedford, in the last edition of his work on the "Principles and Practice of Obstetrics," published in 1870, declares the whole subject of external manipulation in obstetric practice to be still "*sub judice*." Byford alone, in his "Theory and Practice of Obstetrics," recommends version by external manipulation in those cases when the patient is seen early in labor, and in his second edition (1873), pp. 358 seq., clearly describes the operation and gives an illustrative woodcut. Of *diagnostic* external examination neither says a word, and it is to this, therefore, that I desire to call special attention in this paper.

On this point Richardson (loc. cit.) says: "While the use of external manipulation in the *treatment* of obstetric cases has received but little attention, its application as an aid in the *diagnosis* of the fetal position is a subject which has not been thought deserving of even a passing allusion."

While recently revising this paper, Dr. E. Noeggerath, whom I questioned about the literature, referred me to a most valuable paper of his on "The Operation of Turning by External Manipulations, considered from a historical and practical point of view. With Cases," published in the *New York Journal of Medicine*, November, 1859, which gives almost precisely the same literature as quoted by me and goes over the therapeutic procedures very thoroughly, so far as they were practised twenty years ago. I have made frequent use of this paper in the preparation of Chapter II. of this article.

Influenced by these considerations, and fully acquainted as I had become with the examination and manipulation in all its

¹ On Difficult Labors and their Treatment, 1854.

² On the Rectification of the Fetal Position by External Manipulation Phila. Med. and Surg. Rep., Dec. 18th, 1869.

³ Turning the Fetus in Utero by External Manipulation. Phila., Feb. 27th, 1869.

⁴ Loc. cit.

features from my oft-repeated experience in over 1,200 cases of gestation, as clinical assistant and tutor at the School for Midwives in Würzburg, and in fully 1,000 more during a ten months' stay in Vienna, a detailed paper, not only on the therapeutical, but chiefly also on the diagnostic value of the procedure, seemed to me not out of place, and I immediately set to work in Vienna, during the winter of 1871-'72, to collect the necessary data, intending to finish the article at once, and send it to this country for publication. An eight months' tour through Europe, however, prevented its completion at that time; since my return from abroad I have repeatedly thought of revising and finishing it, and had indeed completed it almost to the condition in which I now present it, three years ago, when it was again laid aside for more pressing work, until now, when I hope the subject has become neither uninteresting nor hackneyed—less important it certainly is not than it was seven years ago.

In consequence of my dilatoriness, several short papers on single branches of my subject have gained precedence, the most important of which is undoubtedly that by my friend, Dr. James R. Chadwick, of Boston, on "Palpation in Obstetrics, as practised in Germany,"¹ to which paper, as well as to that of Dr. Richardson, I am indebted for numerous valuable hints.

Of the other papers published within the last eight years, only two, both written by Dr. Frank C. Wilson, of Louisville, Ky., discuss the main question of my paper, obstetric diagnosis by palpation. They are entitled "Fetal Physical Diagnosis" and appeared in the *American Practitioner* for Dec., 1873, and Dec., 1875, the first paper containing an "analysis of the physical examination" of 126, the second of 106 cases. Additional articles, chiefly referring to the nature, frequency, variations and importance of the fetal pulse as recognizable by auscultation have been contributed by Parvin, Underhill, Cummings, Naylor, and several others, to all of which I shall refer in the course of this communication. The publication of these articles, in my opinion, in no wise interferes with the object of

¹ Boston Med. and Surg. Jour., Aug., 1872.

That the subsequent papers have by no means exhausted the subject, and that an article on "Palpation in Obstetrics" is still called for in this country, is shown by the almost verbatim republication by himself of Dr. Chadwick's paper of 1872, in the *Amer. Practitioner* for Nov. and Dec., 1876.

this paper, for, as will be seen, I purpose to cover a much wider field than any or all of the recent productions above mentioned.

The last and most potent inducement not to delay longer the publication of this paper, on which I have spent so much time and labor, has come during the past autumn in the shape of a book by the well-known French obstetrician, A. Pinard, of Paris, on this very subject. His work, entitled "*Traité du palper abdominal au point de vue obstétrical et de la version par manœuvres externes*," as the title shows, treats of the subject as fully as may well be done, and has met with great attention in France. Pinard confirms my own previous statements, when he says that "at present abdominal palpation is practised by a small number of obstetricians; but how small is the number of practitioners who employ it and recognize its importance!"

Dr. Pinard has, in my opinion, done a great service by collecting and systematizing all the data of obstetric palpation; and what he has done for France, I am endeavoring to do in a more humble way for those of our brethren who are not familiar with the French language. Surely, if further justification were needed for the *raison d'être* of this article, this is justification enough.

Before proceeding to a historical sketch of my subject, I wish distinctly to state that it is not the ordinary superficial manual examination of the abdomen of a woman supposed to be pregnant, rapidly practised under the clothes, to ascertain the approximate size of the uterus and the probable presence of a fetus, which is briefly described in all the text-books and doubtless familiar to every one, to which I here refer; but the systematic, scientific, and accurate manipulation, by which in most instances we ascertain the existence of pregnancy, the position in utero, approximate size and general condition of the fetus, and the relations of the uterus; by which a mal-position may frequently readily be rectified, the expulsion of the placenta facilitated, post-partum hemorrhage prevented or arrested, and any abnormalities in form or texture of the upper portion of the uterus and its appendages and of the abdomen detected.

If much of what this paper contains is familiar to many of my readers, I nevertheless trust that there may still be some

to whom the information here imparted is new, interesting, and valuable, and for them this article is written.

HISTORICAL SKETCH.

As will be seen, the literature of this subject, up to within the past few years, is confined entirely to the therapeutie employment of external manipulations, their diagnostic utility not being recognized until quite recently.

Although, for completeness' sake, I might begin with Hippocrates, and recount the rude and imperfect methods by which the ancient Greeks and Romans, and later the Arabian physicians, endeavored to rectify the abnormal position of the fetus, for practical purposes it suffices to commence our historical sketch with the revival of medical science after the Middle Ages, when the practice of midwifery was by popular consent taken from the hands of women who, according to all accounts, exercised their vocation in the most barbarous manner, and intrusted to scientifically educated male physicians.

In the sixteenth century, Eucharius Rösslin (1513) and A. Rueff¹ (Zürich, 1554) in their Manuals of Midwifery, first give accounts of a method of version by means of external and internal manipulation, of which Rueff especially gives a tolerably clear description, a free translation of which is as follows: "The parturient woman shall be ordered to her bed by the midwife, and shall be placed on her back, with her head low and her pelvis high. Then a dexterous woman is to stand at the head of the patient, and shall seize the abdomen with both hands and lift, pull, and direct it gently towards herself; the midwife sits before the patient and waits, and crouching down shall give aid by pushing and directing the child so as to bring it with both thighs and the breech backwards or upwards towards the back of the mother, also to turn the child so that it can be born naturally, with the head below, etc." More than a hundred years later we find the very same advice given by Dr. John Pechey.²

Up to this period the rules for both internal and external examination and manipulation were of the most simple and gen-

¹ Ein schöne lustig Trostbüchle von den Empfangknüssen und Geburten der Menschen, etc. Zürich, 1554.

² Compleat Midwife's Practice. Enlarged by Dr. John Pechey, 1698.

eral kind, and could lay no claim to scientific value or perfection. Mauriceau (1668) was the first to teach obstetrical exploration in a scientific manner, and Puzos,¹ while materially improving the art of obstetrical diagnosis, called attention to the fact that pregnancy may be recognized by means of the combined exploration per vaginam and per abdominem as early as the third month. Although later Levret,² Baudelocque,³ Jörg,⁴ Kiwisch,⁵ Holst,⁶ Veit,⁷ and others laid stress on the importance of this method, and although it is the only means of diagnosing pregnancy in the earlier months, still it has not become as universal as it should be, and as the present state of perfection in physical examination in all the branches of medical science would lead us to expect."

The diagnosis of the pregnant state in the later months is, of course, generally attended with no great difficulties, but, notwithstanding attention was called by Roederer⁹ to the value of external exploration for this purpose, it is only within the last half century that it has gradually become a well-known and comparatively common practice. Schroeder even says on page 76 of the third edition of his "Midwifery," published in 1872, "that the importance of external examination for the diagnosis of pregnancy in the later months has not been properly appreciated until quite recently."

The first methodic and scientific account of external manipulation in its application to *cephalic version* was published in 1807 by Dr. Wigand of Hamburg in the medical journal of that city,¹⁰ and sent five years later as a dissertation to the universities of Berlin and Paris, without, however, attracting public attention. Wigand placed the woman on her back on an ordinary bed, and with one hand gradually pressed the breast

¹ *Traité des Accouchements*, publié par Morisot Deslandes, 1759.

² *L'art des acc.* Paris, 1761, § 448.

³ *L'art des acc.* 8th ed., Paris, 1844, § 371 seq.

⁴ *Taschenbuch für pr. Aerzte u. Geburtshelfer.* Leipzig, 1814.

⁵ *Klin. Vortr. über Krankh. d. weibl. Geschl.* Prag, 1854.

⁶ *Beitr. z. Gyn. n. Geb.* Tübingen, 1867.

⁷ *Krankh. d. weibl. Geschl.* Erlangen, 1867.

⁸ See Thomas, *Dis. of Women*, 1874, p. 63, line 15.

⁹ J. G. Roederer, *Elem. art. Obstet.* Gottingæ, 1753.

¹⁰ Von einer neuen und leichten Methode die Kinder zu wenden und ohne grosse Kunst und Gewalt zur Welt zu fördern. *Hamburger Mag.*, 1807, 1. B., p. 52 and three essays, etc., Hamburg. 1812., p. 35.

of the child upwards towards the fundus uteri, and with the other the head downwards towards the brim of the pelvis; the fetus was then kept in its rectified position by means of pillows applied to the abdomen and chiefly to the spot where the feet were to be felt, and the woman was instructed to lie principally on the side to which the head appeared most inclined to move. If the version was attended with any difficulty, Wigand gradually brought the head nearer the pelvis by placing the woman for some time on the side where the head was situated, relying on the inclined plane of the ilium and the leverage of the fetal breech falling to the other side to bring the head down. This procedure was put into practice during the latter part of gestation, and repeated if necessary.

Wigand's method, although practised and appreciated in Germany, did not become generally known to the remainder of the professional world until the Corsican physician, A. Mattei, published a book entitled "*Essai sur l'accouchement physiologique*, Paris chez Masson, 1855," in which he strongly advocated palpation, "*le palper*," "*la palpation*," as a diagnostic and therapeutic agent in obstetrics, and advised external cephalic version, which he, however, wished called "*réduction céphalique*," in all breech and shoulder presentations during the last fortnight of pregnancy. He considered breech presentations as not physiological, and consequently wished them changed to head presentations during gestation, the operation, if necessary, to be repeated at the commencement of labor, when, in case of need, the membranes may be ruptured to fix the head.¹

Herrgott, of Strassburg,² translated the above-mentioned paper of Wigand and indorsed his and Mattei's views. Esterle of Trent,³ however, published a paper proving that the latter author had overestimated the value of early version by external manipulation, for among 500 women who were examined by external manipulation during the seventh and eighth months of pregnancy, there were found 22 transverse positions of the fetus in utero; of those, 9 rectified themselves spontaneously, 10 were changed by external, and 2 by combined internal and

¹ *Gaz. méd. de Paris*, 23, 1855.

² *Gaz. méd. de Paris*, 27 Juillet, 1856.

³ *Annali universali di med.* Milano, 1859.

external manipulations, and in 1 internal version alone was necessary.

In France, where the operation had already met with strong advocates in Velpeau (1835), Lécorché-Colombe (1836), Cazeaux, Stoltz, Gros, Labouverie, and Réal, an article was published in 1863 by Nivert,¹ who likewise earnestly supported it.

In Germany, the operation was recommended by Carus,² Grenser, Martin,³ Spengler, Arneth, C. Braun,⁴ Hildebrandt, Hegar⁵ (who in conjunction with Mattei⁶ advised the conversion of every breech presentation into a head presentation, during the latter months of pregnancy, by external manipulation), Hecker,⁷ and others.

Two methods of bimanual cephalic version were described and recommended in Germany by Busch and d'Outrepoint, and are known there by their names. Busch advised introducing the hand corresponding to the side on which the head is situated, seizing the latter with the palm and drawing it down toward the pelvic inlet, while the external hand elevates the breech. D'Outrepoint introduced the opposite hand into the uterus, seized the thorax of the child between fingers and thumb, lifted it up and turned it head downwards, while the external hand pushed down the head. The former method is the least severe, the latter the most efficient; both are still occasionally used in suitable cases. The later methods of Wright and Hicks are merely improvements on these two in the direction of greater safety and range of applicability.

In England, Sir James Simpson had already taught the utility of placing one hand on the abdomen during version to steady the uterus for the hand within the organ, but Braxton Hicks⁸ first published a systematic account of a new plan of performing "bimanual version," which has since become known by his name, and which has been until recently very generally believed and stated by some authors⁹ to be identical with that practised and described by Dr. M. B. Wright, of

¹ De la version céphalique par man. externes. Gaz. des Hôpit., 1863, Nos. 47, 50, 51, 56. Mon. f. Gebtrsk., Bd. XXII., p. 152.

² Gynäkologie, 1831.

³ Beit. z. Gyn., H. 2, Jena, 1849. Mon. f. Geb., Bd. XVI., p. 1.

⁴ Allg. Wiener med. Ztg., 1862, No. 65. ⁷ Klinik d. Geb., II., p. 141.

⁵ Deutsche Klinik, 1866, No. 33.

⁸ Lancet, July 14th and 21st, 1860.

⁶ Loc. cit.

⁹ See, for instance, Richardson, l. c.

Cincinnati, six years previously. According to a recent open correspondence on the subject,¹ however, between Drs. Hicks and Wright, the question of priority does not come into play at all in the matter, for the two methods appear to be totally different in principle and practice, although both striving to attain the same end, the conversion of a transverse into a cephalic presentation. Dr. Wright's method, as stated by himself, consists in passing the hand corresponding to the side where the head is located into the vagina, and the fingers and thumb through the cervix; while the external hand grasps the breech and pushes it towards the centre of the uterine cavity, the internal fingers press up the presenting shoulder, the thumb being in the axilla, and propel it laterally in an opposite direction to that taken by the breech. The head then, without being directly acted upon, glides into the superior strait, where, of course, it must be retained by proper means.

Dr. Hicks' method differs herefrom essentially, in that only one or two fingers are passed into the os, by which the presenting part is lifted and gently moved away from the superior strait, while the external hand presses and guides the head into the brim.

In both methods, combined external and internal version is employed, with the difference, as Dr. Wright very correctly says (l. c.), that "the force used to change the position of the fetus is *in opposite directions*. The outside hand is used by Dr. Hicks to *push down the head*—by Dr. Wright to *push up the breech*."

Wright's plan combines the good features of the methods of Busch and d'Outrepont, and while more effective, is doubtless also more severe than that of Hicks.

In the latest (but one) English work on midwifery, by Leishman (October, 1875), not one word is said of the possibility of recognizing the fetal positions or presentations by external examination or abdominal palpation, which is only mentioned as a means of detecting or causing active movements of the child, if the palpation be carefully performed. The eye, we are told, will often observe distinct projections or distortions of the abdomen, corresponding to the subjacent portions of the fetal body, but that we may ascertain the exact presentation by a

¹ Hicks, *Am. J. Obst.*, V., 4, 1873; Wright, *ibid.*, VI., 1, 1873.

few touches of the fingers to the abdomen does not appear to be known to Dr. Leishman. Wigand's method of external version is referred to by Dr. L. (l. c., p. 495) as an operation "the directions for which include elaborate but, we fear, impracticable instructions as to the manner in which we should proceed," and which was never intended by Wigand to produce more than partial version. In conjunction with Braxton Hicks' (or rather Robert Lee's¹) plan of introducing two fingers into the partly dilated cervix and gradually pushing along the presenting part until the feet or head are within each, Wigand's external version is spoken of as very efficient, and a long and very good description of the operation, now known as Braxton Hicks' *bimanual* or *bipolar version*, is given in Hicks' own words.

In Playfair's recent work, the last and probably the best English text-book on obstetrics (March, 1878), we finally find three-quarters of a page devoted to the "detection of fetal position by abdominal palpation," the facility of which, Playfair says, has not been generally appreciated in obstetric works, although by a little practice easy to make out. Playfair also gives the only diagram illustrating the procedure, which I have reproduced (slightly modified) in Fig. 1.²

Version by external manipulation is briefly but clearly described by Playfair, and is very properly restricted to the cases in which the membranes are still unruptured, the fetus is in the transverse position, and there is no immediate necessity for delivery. Dr. Hicks' bimanual operation is referred to at some length and illustrated by cuts, and the various other methods of ascertaining the presence and position of a fetus, and the errors to be avoided (fetal pulsations and movements, intermittent uterine contractions, uterine souffle, etc.), are described in sufficient detail.

It thus appears that up to the past year the main subject of my paper was not even alluded to in English works on obstet-

¹ See W. Tyler Smith's *Lectures on Obstetrics*, Am. Ed. 1858, p. 675, also Leishman, l. c.

² The fact that both Scanzoni and Schroeder have each given only a page and a half to diagnostic palpation alone, this being the longest account I have been able to find in any text-book, only shows that they considered this sufficient for the students of a country where the practice is daily taught on the living subject in all the medical schools. The reason why Playfair did not go more into detail and define and warn against the various difficulties attending the examination is probably to be sought in the limited scope of his epitome.

ries, and was even less known and appreciated in England than in this country.

In America, besides the eight papers already mentioned, by Wright, Noeggerath, Whittaker, Drury, Richardson, Chadwick, and Wilson, nothing has, to my knowledge, been written on the subject. So far as I have been able to learn, external version is briefly referred to in obstetrical lectures as being within the range of possibility, but is scarcely ever advised or discussed in a scientific manner.

Dr. Fordyce Barker informed me that he has for years devoted one lecture of each course at Bellevue to the description of obstetric diagnosis by external examination, illustrating the *modus operandi* on a patient in the amphitheatre; so also does he casually refer to the feasibility of external version, and employs both procedures whenever applicable in private practice. Dr. T. Gaillard Thomas and Dr. Wm. T. Lusk both expressed themselves in a precisely similar manner as regards their obstetric lectures at the College of Physicians and Surgeons and Bellevue Hospital respectively, and all three gentlemen agreed in saying that they thought the details of obstetric diagnosis, by palpation especially, would be new to the majority of physicians in the land, not only of general practitioners, but even of busy obstetricians, as they certainly must be to those men who had learned the practice only from the theoretical lectures attended by them in this country; a paper, therefore, containing these details could not fail to excite interest and prove valuable. As I had supposed, the opportunity to become practically acquainted with the method was at no time offered the student.

As I have thus far shown how little my subject is discussed in the text-books, I may say in the words of Holst,¹ when justifying an article on bimanual examination, which subject is neglected in the books, that "a detailed discussion of this method of examination is necessary to the completeness of a text-book, and information and counsel are subsequently sought in this particular branch by those who did not learn to examine in the clinic." Therefore, a paper like this, supplying, as it is designed to do, the deficiencies in the text-books, fulfils an indication doubtless apparent to many, and offers an,

¹ Beiträge zur Gyn. u. Geb., 1867, p. 2.

of course always imperfect, substitute for formerly neglected clinical instruction.

External manipulations for other purposes than for that of version were not known or advised until within the last fifty years, with the exception of the *expression of the placenta*, which was recommended and taught by Harvey and Hunter, and mentioned by Johnson in his "New System of Midwifery," 1769, "if performed on the outside of the abdomen, as equal to pressure on the uterus." Within a few years, Credé, of Leipzig,¹ devised and described an improvement on the old method of expression, which is now known by his name, and was seconded by Spiegelberg,² Winckel,³ Schüle,⁴ Künecke,⁵ Chantreuil,⁶ and is now generally adopted by all German physicians, and all foreigners who have profited by the teachings of the obstetricians of that country.

The *expression of the fetus* by means of manual pressure on the uterus through the abdominal parietes in cases of tedious labor owing to deficient uterine contractions was advocated at different periods during the last twenty years by Ritgen, Barnes, Kristeller,⁷ Playfair,⁸ and others, but has not been able to find its way into the esteem of the profession.⁹

The *expression of the head of the fetus during the extraction in footling presentations*, by means of pressure through the abdominal walls, was already recommended by Celsus (in the time of Augustus), again by A. Paré (1560), Pugh (1753), Wigand (1800), has in our time found warm supporters in Spiegelberg, C. Braun, Martin, and Fluck, and quite recently in Goodell (AM. JOUR. OBST., Aug., 1875, and Trans. Phila. Obst. Soc., AM. JOUR. OBST., Feb. and June, 1876), particularly after version in contracted pelvis, and is a manipulation of the most decided utility which often enables us to save the life of the child.

¹ Klin. Vortr. über Geb., 1853, p. 599, and M. f. G., B. 16, p. 337, p. 345, B. 17, p. 274, and B. 22, p. 310.

² Würzb. Med. Z., II., 1861, p. 39.

³ M. f. Geb., B. 21, p. 365.

⁴ M. f. Geb., B. 22, p. 15.

⁵ Schuckardt's Zeitschr. f. prakt. Heilk., 1866, p. 417.

⁶ Arch. gén. de Méd. and AM. J. of OBST., IV., p. 334.

⁷ Berl. kl. W., 1867, No. 6, and M. f. Geb., B. 29, p. 337.

⁸ Lancet, 1870, Vol. II., p. 465.

⁹ This operation is mentioned already by Albucasis, Rodericus a Castro (1594), Jacob Rüff (1554), Ambroise Paré, and Johann von Hoorn.

Auscultation for the purpose of diagnosing the existence of pregnancy and the position of the child was first employed by Mayer,¹ who in 1818 discovered the pulsations of the fetal heart, but the real practical utility of this sign was not understood until Lejumeau de Kergaradec,² in 1822, fully demonstrated its value, and also discovered the placental or uterine murmur, the origin of which he attributed to the rushing of the blood in the placenta. Ritgen³ denied the placental origin of the murmur and believed it to be caused by the blood coursing through the tortuous uterine vessels, both veins and arteries, a theory now generally adopted, notwithstanding the supposition of Kiwisch (1851) that it originated in the external epigastric arteries on account of their course being more tortuous and angular during gestation, or in the iliac arteries, which are more or less compressed by the pregnant uterus.

Bouilland, in 1836 (and again in 1876), advanced a view supporting in a measure that of Kiwisch, namely, that the placental souffle is produced by the compression of the intrapelvic arteries by the pregnant uterus. On the other hand, the majority of contemporaneous French authors locate the bruit entirely in the uterus; Laennec in the chief nutrient artery of the placenta; Dubois (1831) believed that it arises from the direct passage of the arterial blood into the dilated spaces of the venous system within the uterine walls; Depaul⁴ claimed (and still claims in 1876) that the souffle is produced in the large arteries which supply the pregnant uterus and are most developed in the neighborhood of the placenta. An entirely novel origin for the uterine souffle has lately been discovered by Glénard (August, 1876), to which I shall refer in detail hereafter. Among German authors, d'Outrepoint,⁵ with his pupils Ulsamer⁶ and Haus,⁷ Carns and Busch (who first mentioned the new discovery in their text-books), and in

¹ Bibl. univ. des sciences, Tome IX., Geneva, 1818.

² Mémoire sur l'auscult. de la grossesse, Paris, 1822.

³ Mende's Beob. u. Bemerk. aus der Geb., Göttingen, 1825.

⁴ Traité théor. et prat. de l'auscult. obst., Paris, 1847.

⁵ Gemeins. Deutsche Zeitschr. f. Geb., 1832, VII., p. 21.

⁶ Rhein. Jahrb. f. Med. u. Chir., VII., p. 50

⁷ Die Auscultation in Bezug auf Schwangerschaft, Würzburg, 1823.

later years Hohl, Naegele,¹ Hüter,² and Frankenhäuser³ investigated and followed up the subject of obstetric auscultation, to which Dubois, Depaul,⁴ Stoltz, in France, and Nagle, Fergusson, and Kennedy,⁵ in England, also paid special attention.

At present it is familiar to and practised by every educated accoucheur, although there are still some points, such as the detection of the sex of the child from the relative frequency of the cardiac pulsations, and the influence of some forms of dys-tocia on the rhythm of the fetal heart, which are yet open to discussion. The observations of Steele, Strong, Cummins, Underhill, Naylor, Parvin, and others on these subjects will be discussed under their respective headings.

The quantity of literature given above, although slight in comparison with what may be found on many other not more important questions, is still large enough to show the amount of attention and thought which has been devoted to the subject of external examination and manipulation by many prominent men in the profession, and consequently to demonstrate practically its value and importance, which is fully appreciated by all German obstetricians. The practice is, therefore, taught in all the German medical schools before, and on account of the greater readiness with which the women submit to it, almost in preference to internal examination. It is for this reason that German students are generally very familiar with the external examination of a pregnant woman, even though they be somewhat deficient in the frequently more difficult process of indagation. In Germany, no physician in private or hospital practice would think of giving a definite opinion on an obstetrical case, either with reference to diagnosis, prognosis, or treatment, without having controlled the results of his exploration per vaginam by the external palpation, inspection, and auscultation of the abdomen; in lying-in hospitals, indeed, every woman who applies for admission, no matter at what time of pregnancy, is by rule subjected to a thorough external and internal examination.

¹ Die geburtsh. Auscultation, Mainz, 1838.

² M. f. Geb., B. 18, Suppl., p. 23.

³ M. f. Geb., B. 14. p. 161.

⁴ Traité théor. et prat. de l'auscult. obst., Paris, 1847.

⁵ Obs. on Obst. Ausc., Dublin, 1833.

That the position of the child can be ascertained with much greater certainty and often only in this manner, that errors in diagnosis and treatment are much more easily avoided, and particular abnormal conditions detected with greater facility by external manipulation than by internal examination alone, are facts which no one who has had sufficient opportunity to practise the procedure will attempt to deny, and which ought in themselves to be reason enough for the general adoption and employment of this method. Schröder¹ says: *For a less practised observer, unless the conditions be exceedingly unfavorable, the determination of the fetal presentation by external examination allows of much less room for error than if undertaken by internal exploration alone*, and the former should never be omitted, because it gives us an excellent control of the results obtained by indagation." By using all available means of making a correct diagnosis and detecting whatever may be injurious, we are not only doing our duty as physicians to our patients, whom it is our first and chief object to assist and benefit, even, if necessary, at the cost of slight personal inconvenience on either side, but we are also conforming to the present requirements of our profession in examining every case before us in the most thorough and scientific manner possible.

An objection which I have heard made in this country to the universal introduction of external examination in obstetric cases is that private patients, particularly those in the higher walks of life, will not submit to it on the ground of its being an improper and unnecessary exposure of the person, and that it is therefore likely to be restricted to hospital and poor practice. I do not think that any woman who has sufficient confidence in a physician to intrust to him her life during confinement will object to his palpating and auscultating her abdomen after submitting to a vaginal examination, when she is told that the one method of examination is as necessary to the safety of herself and child during the coming or already present ordeal as the other. I quite agree with Dr. Wilson when he says (l. c.) that he has never had a patient refuse when the necessity for the examination and the information to be gained by it had been explained to her, and that, instead of

¹ Loc. cit., p. 112.

lowering the physician in her estimation, it will tend to inspire her with confidence and convince her that he thoroughly understands his business.

I think further that, if our private patients were once initiated into the benefits of this practice and the very slight inconvenience occasioned them by it, and if our older physicians would make it a rule to insist upon it in every case (and they often are but little less able to dispense with it than their younger confrères), it would soon become a universal custom, as much desired by patient as by physician. Then we will see our patients calling upon us of their own accord during the last few weeks of pregnancy to demand, for their own satisfaction, an examination which now we frequently can obtain only after long persuasion; and it will become customary among the women of the poorer classes to insure themselves against accident during childbirth by seeking the same information at the clinics and dispensaries. How many malpresentations could thus be detected and corrected, how many dangers averted, how many women forewarned! Scarcely one of us but has met with obstetric cases in which a previous examination, before labor, would have enabled him to remedy a difficulty or prepare for an unforeseen accident.

External obstetric examination and manipulation admits of division into two great chapters, accordingly as the procedure is adopted for the purpose of *diagnosis* or of *treatment*.

I.

DIAGNOSIS.

For the purpose of DIAGNOSIS we distinguish several practical subdivisions of the procedure, each of which in a measure controls and supplements the others, and which all together tend to give certainty to the examination.

These are: *Inspection*, *Palpation*, *Percussion*, and *Auscultation* of the abdomen, and shall each be treated of separately.

The proper period for making the examination is at any time during the last month of gestation, in order that malpresentations and any abnormal conditions may be detected and corrected previous to the actual inception of labor, or at

least suitable preparations made to meet the probable difficulty. It is also the first duty of the physician, as soon as he is called to an obstetric case, even before he makes the controlling vaginal exploration, to practise external examination.

Position of the woman.

The woman to be examined invariably occupies a recumbent position on her back, with slightly elevated head and with her thighs drawn up, in order to relax the abdominal muscles. If she voluntarily contracts her muscles, as is often the case from apprehension or reflex irritation by the examining fingers, she should be told to open her mouth and take deep in- and expirations, when during the latter her muscles will be found perfectly relaxed. Corsets and drawers should be removed, all constricting bands about the waist loosened, and the abdomen entirely exposed. The lower extremities are covered by a sheet, which may also extend over the abdomen, or the chemise may be drawn down (not during inspection of course), but it should be borne in mind that any covering, however light, interferes with the facility, delicacy, and accuracy of the examination.

The bladder and rectum should be in an empty condition, and if necessary must be evacuated immediately prior to the exploration.

A.—INSPECTION.

The ocular examination of the abdomen of a pregnant woman gives us a variety of diagnostic signs, such as the size and shape of the abdomen, the appearance of the skin, particularly of the linea alba, the presence or absence and the appearance of cutaneous striæ, the form of the umbilicus, and frequently also the visible motions of the fetus.

As regards the size and shape of the abdomen, a somewhat practised eye can form an approximate estimate of the probable stage of pregnancy and perhaps also the position (not presentation) of the fetus in utero; for, as a rule, we find the abdomen in longitudinal positions to be long, narrow, and oval, whereas in transverse positions it is broad and more distended at its base and less so above the umbilicus, which latter peculiarity might also lead to the diagnosis of twins, especially if there be a longitudinal furrow in the median line, and each

half of the abdomen be equally distended. This longitudinal furrow, or an apparent division of the abdomen into two halves, may be simulated by a distended bladder or arise from a peculiar formation of the fundus uteri (*uterus arcuatus*) and is therefore of but little value in the diagnosis of the fetal position or plurality. The size and shape of the abdomen can be just as well ascertained by palpation, and is, moreover, subject to so many variations that no conclusive deduction whatever should be made therefrom.

The skin of the abdomen may be perfectly white and smooth, but generally it shows numerous red or white shiny lines or striæ, which arise from its distention during pregnancy, and are owing to the rupture of the deeper layer of the epidermis, the *rete mucosum* or *Malpighi*, the red striæ being of recent origin and occurring principally with *primigravidæ*, and the white marks being the evidence of former pregnancy and having already undergone the process of cicatrization, an explanation first given by *Credé*.¹ These lacerations of the *rete Malpighi* could, of course, only indicate a first pregnancy, as the old cicatrices do not disappear in the course of time, but the fact of their being frequently seen in cases of distention of the skin by tumors, ascites, and even simply from obesity, and their being not unfrequently wanting, even in *multigravidæ*, makes them of but secondary importance in the diagnosis of pregnancy.

According to *Hecker* and *Buhl*,² these striæ are wanting in 6 per cent of all cases; in 11 per cent of *primigravidæ*, in 5 per cent of *multigravidæ*. They are found also on the nates and thighs, as well as *mammæ*, and *Schultze*³ saw them on the thighs of women who had borne no children in 36 per cent, and in men in 6 per cent. He explains this fact by the greater increase in the breadth of the hips in the female sex at puberty.

The *linea alba* ordinarily assumes a dark color during the first pregnancy, especially in brunette women, and retains this pigmentation generally in after-life, so that it can only be considered a diagnostic sign with the first child.

¹ *Mon. f. Geb.*, 1858.

² *Klinik d. Geb.*, Leipzig, 1861.

³ *Jenaische Z. f. Med. u. Nat.*, 4. Band, 3. u. 4. Heft, 1868, p. 577.

The umbilicus becomes gradually flatter and less depressed during the last five months of pregnancy, and occasionally even protrudes above the surrounding skin, without, however, being at all characteristic of pregnancy, inasmuch as any considerable distention of the abdomen may produce the same result. Should the abdominal walls not be too thick or rigid, we can often see sudden protrusions of certain parts, and rapid twitchings over the abdominal surface, arising from the motions of the child and its close contiguity to the intrauterine surface. I have repeatedly observed the fetal head in breech or transverse presentations distinctly recognizable by sight through the thin abdominal and uterine walls, and the smaller parts, arms and legs, can be recognized at times in almost every case. It must be borne in mind, however, for the avoidance of error, that such twitchings may be simulated, even at will, by contractions of the abdominal muscles and the peristaltic motions of the intestines.

Dr. Ludwig Bandl, of Vienna, has recently¹ pointed out a phenomenon recognizable by inspection of the abdomen during labor only, which is of considerable practical importance. He found that, in those cases where there exists an abnormal obstacle to the expulsion of the child, such as contracted pelvis, malposition of the child, etc., a distinct transverse furrow appears on the abdomen, about midway between the umbilicus and pubes, just at the junction of the cervix and body of the uterus. This furrow is produced by the wedging in of the cervix into the brim of the pelvis by the presenting part, and the concomitant fruitless concentric contractions of the uterine body. It occurs only in abnormal labors, and affords a valuable indication as to the time and necessity for operative interference, for obviously the undue continuation of this condition would very readily result in the production of a rupture of the uterus. Indeed, Bandl first witnessed this sign after such an accident. In normal labors, the presenting part passes into the pelvic cavity and fills out the cervical canal equally, thus preventing the occurrence of a transverse furrow. I have seen this furrow in several cases where there was excessive pelvic obliquity and consequent anteversion of the uterus, a condition simulating

¹ Trans. Germ. Med. Assoc., 1875. Arch. f. Gyn., VIII., 3.

in its influence on the progress of labor the minor degrees of contracted pelvis.

B.—PALPATION.

By gently and firmly pressing the palmar surfaces (not the tips only) of all the fingers of both hands into the abdominal parietes and gradually moving them over the surface of the abdomen with the least possible irritation, we are able, in the majority of instances, to detect with absolute certainty the shape and consistence of the uterus, period of pregnancy as shown by the size, the amount of the liquor amnii, the position, approximate size, life, and greater or lesser degree of mobility of the child, its different members, the presence of more than one

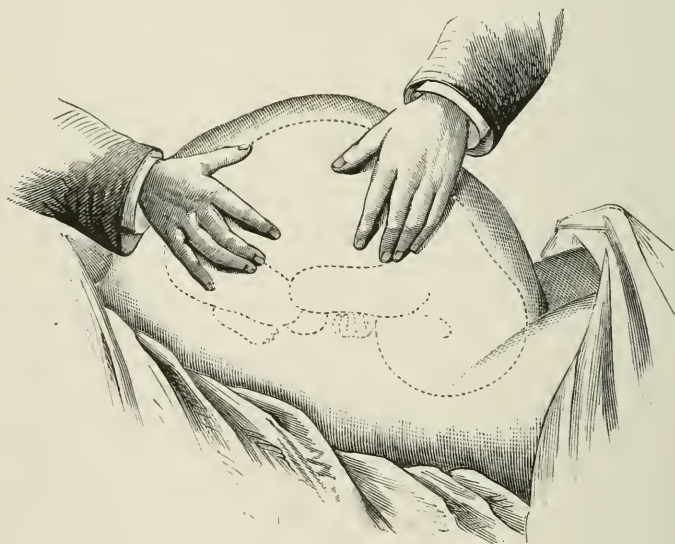


FIG. 1.

fetus, the fulness of the urinary bladder, and finally any abnormal condition which may be present, such as tumors and malpositions of the uterus, diastasis of the recti muscles, ascites, etc.

Method of Palpation.—1st. The physician, having warmed his hands, stands on the right of the patient and gently places them on her bare abdomen, moving them slowly about with

a slight pressing, "pawing" motion, keeping them sometimes close together, at others separated, now examining only one spot, then endeavoring to bring the uterus and its contents between the two hands. With the hands kept nearly flat on the abdomen, the shape, consistence, inequalities, and general configuration of the uterus are ascertained step by step; the facility of this exploration being modified by the greater or lesser amount of abdominal adipose tissue, the thickness of which can be determined by pinching up a fold of the integument between the forefinger and thumb. 2d. The second step is to ascertain the *period of gestation*, which is done by slowly passing the tips of the fingers towards the upper part of the abdomen, gently pressing them in until resistance ceases, and the fingers can be pressed in more or less deeply towards the spinal column, when the fundus can usually be grasped and felt as a rounded, firm, convex surface. By pressing the ulnar or radial edge of the hand, as the case may be, deep into the abdominal wall at the point where the fundus ceases, and laying the hand flat on the integument, the number of finger-breadths which the fundus is situated above the symphysis or umbilicus, or below the ensiform process or umbilicus, is easily determined, and consequently also the approximate period of the pregnancy (as will be shown hereafter). 3d. This having been ascertained, the hands, moving along side by side, seek the palpable parts of the fetus—the *head* or *breech*, the *knees* and *feet* (the *arms*, being folded on the thorax, are scarcely ever accessible to the external touch), and the *back*, and by gently pressing, perhaps slightly displacing them, determine their character. 4th. The *presenting part* is detected by grasping the hypogastric or suprapubic region with the whole hand, four fingers being on one side and the thumb on the other (Fig. 2), or by placing one's self by the side of the woman with one's back towards her head, putting one hand with the fingers downwards on each of the inguinal regions, and attempting to make the finger points meet in the median line (Fig. 3); the presenting part will thus be firmly grasped between the fingers and thumb, or between both hands, and its character, whether head or breech, generally easily determined.

5th. To detect the *mobility of the fetal parts*, the tips of the fingers are gently placed on the abdominal integument, and

then quickly and suddenly thrust inwards against the subjacent parts, which, if extremities, will be withdrawn ; if head or breech,

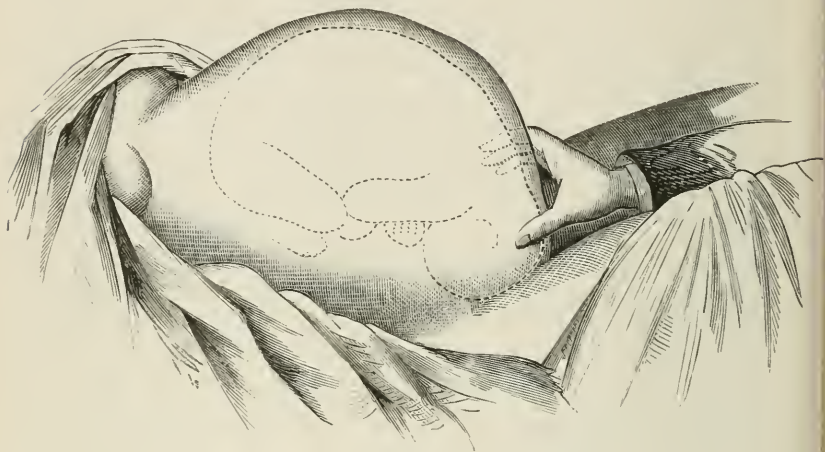


FIG. 2.

will recede and rebound against the exploring fingers (*ballotement*). The motion of external ballotement is rather a shove

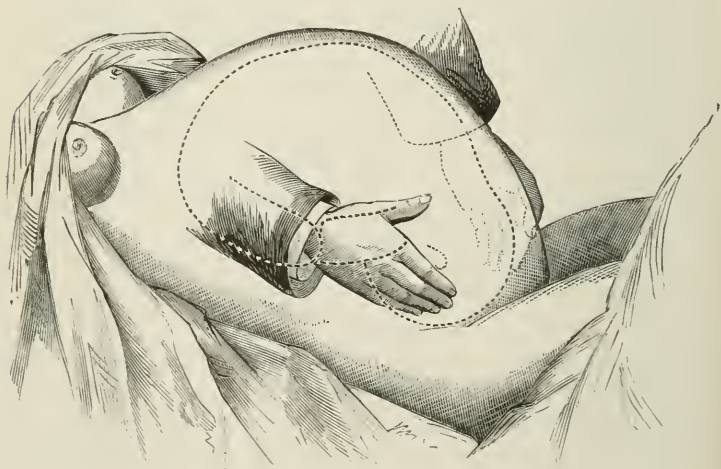


FIG. 3.

than a blow and is best executed by an action from the elbow, the wrist and hand being stiff and but slightly flexed.

It is hardly possible to explain every minute technicality of the manual of external examination, for it is best learned by practice; the above description is sufficiently explicit to enable any one, with the assistance of time and careful attention to the special points to be referred to hereafter, to examine a pregnant woman by this method with a fair prospect of making an accurate diagnosis. One point must be remembered, and that is, that no force whatever need be employed in any part of the examination, and that the woman should be subjected to no real discomfort or pain; indeed, forcible or promiscuous manipulation will in itself frustrate the object of the procedure, by exciting reflex contractions of the abdominal and uterine muscles, and thus withdrawing the fetus from the touch of the examiner.

PERIOD OF PREGNANCY.—The size and shape of the uterus, particularly the former, are liable to vary greatly at the same stage of gestation in different persons, according to the size of the child and the quantity of amniotic fluid.

If we divide the normal period of gestation, 280 days, reckoning from the commencement of the last menstruation, into ten lunar months of 28 days each, we find the following conditions during each of the ten months:

1st and 2d months.—The uterus is still in the cavity of the pelvis and not palpable.

3d and 4th months.—During the third month the fundus uteri gradually rises above the brim of the pelvis, especially if there be contraction of the latter, and in very emaciated persons becomes accessible to palpation. Ordinarily the uterus is not palpable until towards the end of the fourth month, when it may be felt about midway between the symphysis pubis and the umbilicus (four fingers' breadth above the symphysis) as a rounded, elastic body with a tolerably even surface. Ballotement may occasionally be felt.

5th month.—The fundus gradually rises, and at the end of this month is to be felt about one finger's breadth below the umbilicus, generally slightly to the right of the median line; in lean persons the voluntary motions and the several parts of the fetus can frequently be detected by the hand, and ballotement is not unfrequently felt.

6th month.—The fundus uteri is palpable about one finger's breadth above the umbilicus, the fetal parts become more dis-

tinct, especially in multiparæ, ballottement is usual, and the presentation can ordinarily be made out without much difficulty. The surface of the uterus becomes more irregular, in accordance with the increased size and strength of the child, and the consequent protrusion of the uterine walls by its members. The fetal heart-sounds, which are occasionally faintly heard at the end of the fifth month, have now become perfectly distinct to a practised ear.

7th month.—Fundus uteri three fingers' breadth above the umbilicus, distinctly inclining towards the right side. The circumference of the abdomen at the umbilicus is 91 cm.; midway between umbilicus and symphysis, 94 cm.; from the ensiform process to the symphysis, about 42 cm. The umbilicus is flat; the fetal parts become more and more distinct.

8th month.—Fundus midway between umbilicus and ensiform process, 4–5" above the former, and slightly towards the right side (Scanzoni); circumference of abdomen at height of umbilicus averages 95 cm.; between navel and symphysis, 97 cm.; distance between ensiform process and symphysis, 43.5 cm. (Schroeder). The umbilical fossa is entirely obliterated. In primigravidæ the head is situated more in the median line, in multigravidæ it is frequently found slightly to one side or the other. The fetal parts during the last two months have gradually become more easily palpable; the fetus has lost its extreme mobility, although the breech and head still readily respond to the motion of ballottement.

9th month.—Fundus immediately below the ensiform process, having reached its highest point. Distance between ensiform process and symphysis, fully 44 cm.; circumference at umbilicus, 97.5 cm.; below, 99 cm. Umbilicus protrudes (Schroeder). The fetus closely touches the uterine walls, the surface of the uterus is consequently less impressible. That part of the uterus and abdomen in which the breech lies generally protrudes, thus destroying the spherical shape of the fundus.

10th month.—During the first half of this month, the uterus still increases in size, and not being able to extend any higher in a vertical direction, expands laterally under the false ribs, particularly on the right side; the integument of the precordial region is then often so tight as to prevent the palpation of

the fundus. The circumference at the umbilicus is 99 cm.; below it, 100 cm.; the distance from ensiform process to symphysis, 45.5 cm. (Schroeder). During the last two weeks of gestation the lower segment of the uterus, and with it the presenting part of the fetus, descend often quite suddenly into the grasp of the superior strait of the pelvis and become more or less firmly fixed there; consequently the fundus leaves the precordial region and becomes palpable again about midway between the umbilicus and the ensiform process, nearly where it was at the end of the 8th month, generally slightly higher than at that period; it has fallen forward in its descent, and the change in the appearance of the abdomen is perceptible even to the casual observer.

Scanzoni, Schroeder, Playfair, and indeed most writers on obstetrics agree in their description of the descent of the uterus during the two closing weeks of gestation.

It is evident that this old method of measuring the height of the fundus uteri as so many finger breadths above or below the umbilicus must be an exceedingly uncertain one, because the length between the umbilicus and symphysis pubis varies greatly in different individuals. As the most ready, convenient, and ordinarily sufficiently definite plan, I have, however, described it above; but I still must agree with Sutugin¹ when he expresses his surprise that careful teachers like Hildebrandt and Schroeder should still advise this method of examination. Ahlfeld,² and four years after him Vassily Sutugin, have both measured the height of the fundus uteri from the upper border of the symphysis pubis with tape-measure and pelvimeter (which latter instrument is much the more reliable), and have constructed tables of the average height which differ but very slightly and are positively trustworthy.

They both arrive at the conclusion that the height of the fundus uteri above the pubes is a reliable objective symptom of various periods of pregnancy in normal and reducible oblique presentations, when the womb contains only one fetus. In

¹Vassily Sutugin: On the Means of Ascertaining the Length of Gestation by Measurements of the Fetus and gravid Uterus during the Second Period of Pregnancy. Trans. Lond. Obst. Soc. Obst. J. Gr. Br., Sept., '75.

²Arch. f. Gynäkologie, Band II., Heft 3, 1871. Bestimmungen der Grösse und des Alters der Frucht.

plural pregnancy, non-reducible, oblique, and transverse presentations, the height of the uterus cannot be used to indicate the period of pregnancy.

Contrary to the universally accepted opinion, Ahlfeld, Sutugin, and Richelot¹ decide that the fundus uteri keeps ascending to the very end of pregnancy, and that there is no descent of the fundus during the tenth month; this rule is applicable to every case individually, whether primipara or multipara, provided the patient be placed during examination in a horizontal position. As a rule, on the patient assuming the erect posture, the measurements show, however, that during the last month of pregnancy the fundus uteri stands two finger breadths lower than during the preceding month. The difference in height of the fundus in primiparæ and multiparæ is almost inappreciable; as regards breadth, however, in the multiparæ the womb is somewhat broader, commencing with the thirty-fourth week of pregnancy. This is also the case in breech presentations, in which the height, however, is 3 centimetres greater than in head presentations.

The average height of the fundus uteri and the average breadth of the uterus were found by Sutugin to be, in the

	AVER. HEIGHT.	AVER. BREADTH.
21st week	19.0 cm.	14.0 cm.
22d "	19.0 "	15.0 "
23d "	19.0 "	15.5 "
24th "	19.0 "	15.5 "
25th "	21.0 "	16.5 "
26th "	21.0 "	15.5 "
27th "	19.0 "	16.0 "
28th "	20.1 "	16.8 "
29th "	21.5 "	17.1 "
30th "	22.4 "	17.4 "
31st "	21.9 "	17.9 "
32d "	22.0 "	18.3 "
33d "	22.1 "	19.1 "
34th "	23.2 "	18.9 "
35th "	23.8 "	19.6 "
36th "	24.0 "	19.8 "
37th "	24.15 "	19.8 "

¹ Richelot: *Zur Diagnostik der Schwangerschaft*. Inaug. Diss., Königsberg, 1868.

	AVER. HEIGHT.	AVER. BREADTH.
38th week.....	24.5 cm.....	20.4 cm.
39th "	24.9 "	20.4 "
40th "	25.4 "	20.4 "

In the erect posture the average height of the fundus was 22.5 cm. in the 40th week, 23.3 cm. in the 39th, 23.4 cm. in the 38th, 23.3 cm. in the 37th, 22.5 cm. in the 36th, 22 cm. in the 35th week.

It is scarcely necessary to say, after the above remarks, that instrumental measurement of the dimensions of the abdomen is greatly to be preferred to a mere manual estimate.

Although these measurements will generally be found accurate in determining the period of gestation, they do not, as already stated by Sutugin, hold good when the fetus occupies a transverse position, by which, of course, the vertical diameter of the uterus is shortened; nor always in case of twins, with which the transverse diameter also becomes disproportionately large, nor in case of contraction of the pelvic brim, by which the presenting part is prevented from descending during the last fortnight of gestation, and consequently the usual descent of the fundus also does not take place; nor in case of fulness of the bladder or rectum, by which the uterus is likewise prevented from sinking to its proper level in the pelvis. Deformities of the vertebral column or thorax, tumors of the uterus, ovaries, or pelvis, and hydramnios, may further influence the correctness of the above data.

Of course, the result of the external examination should always be controlled, and may frequently be modified, by a vaginal exploration.

According to measurements made by Hecker,¹ which agree generally with those already quoted from Schroeder, the *size of the abdomen in pregnancy*, as mentioned before, is extremely variable; in 112 cases he found that the abdomen increases in circumference steadily until confinement, in the tenth month 3 to 4 cm., in the ninth and tenth months 7 to 8 cm. The circumference measured in the ninth month 89 to 112 cm.; in the tenth month, 88 to 116 cm.; and during labor, 90 to 116 cm. The average in the tenth month was: for primigravidæ, 97 cm.; for multigravidæ, 100 cm.

¹ Hecker and Buhl, loc. cit.

The *tension and firmness of the abdominal walls* does not necessarily diminish with the increasing number of pregnancies, although it is undoubtedly more common to find the abdominal and uterine parietes more flabby, pendulous, and incompressible in multiparæ (the more, the greater the number of children) than in primiparæ. The increased circumference of the abdomen in the former, mentioned by Hecker, probably depends partly on this cause and partly on the increase of abdominal adipose tissue so commonly found in women as they advance in age. During the first four months, the uterine walls are firm and tense, with the increase of liquor amnii, however, they become thinner, more incompressible and pliant, until the filling out of the uterine cavity by the growth of the child and its consequently diminished mobility again renders them less yielding to the touch.

The *uterus* is easily recognized by the touch as an elastic, regular body, rounded above and extending down into the pelvis. In the earlier months, so long as the fetus does not occupy any permanent position, its shape is more spherical, later, when the child assumes a fixed, generally longitudinal position, it conforms to the shape of its contents and becomes ovoid. The fundus uteri generally inclines slightly towards the right side of the abdomen, a phenomenon which has been variously explained, Madame Lachapelle supposing it to result from the right round ligament being shorter than the left, and E. Martin attributing it to the presence of organic muscular fibres in the round ligament. Scanzoni¹ gives the following explanation:

The uterus, increasing in size, pushes the intestines out of their normal position; these latter retire where they have the most room, that is, to the left upper portion of the abdominal cavity, the right being occupied by the liver; the uterus is thus obliged to take the only open space and incline towards the right side, pushing the abdominal wall before it.

Any abnormalities in the shape of the uterus or the presence of subperitoneal fibroid tumors are easily detected by palpation. I have several times observed a distinct depression of the fundus in the median line with a bulging out on both sides, which could be and doubtless was nothing else than the slightest degree of uterus bicornis (or uterus arcuatus according to

¹ Loc. cit.

Kussmaul¹) and is a remnant of the formation of the uterus from the two ducts of Müller.

An exceedingly slight concavity with a corresponding prominence of the two cornua is generally noticed during the contraction of the uterus in labor in these cases. Knowing, as we do, the various forms of dystocia which are liable to happen in exaggerated cases of this deformity, the detection of its presence is not without practical value as regards prognosis and treatment.

A valuable diagnostic sign of pregnancy has been pointed out by Braxton Hicks,² namely, the occurrence of regular intermittent contraction and relaxation of the uterus when that organ is firmly grasped by the hand through the abdominal walls, without friction or active pressure being used. This intermittent contraction occurs every five or ten minutes, or oftener, and Playfair says³ that he has never known it to fail or be absent when pregnancy existed. This sign has the advantage over the fetal movement that it is constant, not easily simulated by anything else, and that it occurs whether the uterus contains a living or a dead child. The history of the case will prevent its giving rise to errors in the case of the enlargement of the uterus by tumors or retained fluid, where this sign may also occur.

The chief object of palpation, the *diagnosis of the* presence of a fetus and its position, is seldom possible before the end of the fifth month, the quantity of liquor amnii, the diminutive size, and the pliability and mobility of the child, the tension and thickness of the uterine walls, rendering it very difficult to obtain a definite result which could perhaps only be arrived at by bimanual examination.

Before the seventh lunar month the quantity of amniotic fluid is so much out of proportion to the size of the fetus that the latter floats free in the uterine cavity, neither marring the symmetry of the uterine outline nor remaining long enough in contact with the uterine walls to allow of the distinct palpation of its individual members. From that time, however (exceptionally even during the sixth month), the several por-

¹ Von dem Mangel, Verkümmern und Verdoppelung der Gebärmutter. Würzburg, 1859.

² Obst. Trans., Vol. XIII.

³ L. c., p. 152.

tions of the fetal body become more and more distinct to the touch, and are recognized by the following characteristics:

The *head* is felt as a round, hard, exceedingly movable body (usually giving the bounding sensation called *ballottement*), apparently floating about entirely free, on account of its flexible connection with the neck.

The *breech* is a larger, softer, more irregular, less movable tumor, the rebound of which is much slower and less vivid than that of the head.

The *back*, being the continuation of the breech, is detected by the uninterrupted, regular resistance offered to the palpating fingers (Scanzoni says that with very thin and flaccid abdominal walls he has several times been able to recognize the back by the spinous processes of the vertebræ; I have never met with such a case).

The *feet* and *legs* are recognized as very movable, often sharply projecting, small, irregular bodies, which are easily pushed about, and frequently retaliate by striking sharp blows to the examining hand.

The *arms* are not usually palpable, because they are kept in a crossed and flexed position on the thorax.

From the place which each of these different members occupies in the uterus, it is easy to diagnosticate the momentary situation of the child, which, however, frequently voluntarily changes its position. According to B. S. Schultze, Fasbender, and Hoening, the change of the fetal position in the seventh and eighth months takes place in 12.4 per cent of primigravidæ, and 23 per cent of multigravidæ, two-thirds of all the changes being from one head presentation to another.

Sutugin¹ finds that changes of position are quite common in plurigravidæ even at the end of pregnancy; in primigravidæ they are much more rare near term, but do still occur during the last week, and *even during actual labor itself*. The frequency of change of fetal position both in primigravidæ and plurigravidæ is nearly three times as frequent in contracted pelves as in normal pelves.

Contractions of the uterus and abdominal muscles exert considerable influence on the frequency of the change of position, and especially of the presentation, which, however, do not

¹ St. Petersburg Med. Ztg., 1875, V., 2.

appear to be affected by the sex and size of the fetus, and the size and age of the mother. The spontaneous movements of the fetus are easily detected by the examining hand, and serve to indicate, 1st, the undoubted presence and life of the child ; 2d, the probable quantity of amniotic fluid, and 3d, the approximate size and strength of the child. If the child is strong and healthy, its motions will generally be quick and active, provided the amount of liquor amnii permits sufficient freedom ; if the amniotic fluid is excessive in quantity, the fetal movement will be rapid, but weak and flighty, because, as a rule, the size of the fetus and the amount of liquor amnii are in inverse proportion.

The voluntary motions of the child are not always felt, because in some cases the uterus incloses its contents too firmly and there is too little fluid present, in others the fetus is weak, sickly, and incapable of active exertion ; however, some mothers never feel quickening during their whole pregnancy, and still the children are born strong and healthy.

These voluntary fetal motions are of two kinds : 1, a slow, gliding, rolling motion, proceeding from the whole child, and 2, quick sharp knocks or blows which result from the action of its upper or lower extremities. These so-called *active* motions of the fetus are rarely felt or observed before the twentieth week of gestation. Only one instance do I find mentioned of their having been felt as early as the beginning of the fourth month, an extraordinary and precocious development of the child being the probable cause.¹ In addition to this spontaneous mobility, the examining physician can, in most cases, especially if the uterine and abdominal walls be thin and flaccid, the child small and the amniotic fluid abundant, press and push the child about in the uterus with greater or lesser facility, and thus cause the passive fetal motions, which sensation, together with the palpation of the different portions of the child, especially the head, and the general appearance of the abdomen, ought with some practice to give him at least an approximate idea of the probable *size of the fetus*. A more than approximate idea is very difficult to obtain, even with the assistance of a vaginal examination ; although Prof. Carl Braun, of Vienna, with his immense experience, professes to be able to

¹ Cramoisy, L'abeille méd., 29, 1857.

diagnosticate the weight and length of the fetus in utero by means of external and internal examination, there are not very many practitioners who have sufficient experience to do the same, and I have seen Prof. Braun himself occasionally shoot pretty wide of the mark.

As an aid in this calculation and the diagnosis of the stage of pregnancy, as also for the benefit of prognosis and treatment, Ahlfeld, of Leipzig, has lately¹ published an account of a number of measurements which he made of the length of the uterus (to which I have already referred in another connection), and therefrom he computed the length and consequently the weight of the child. Footing on several observations of his and others, that the length of the uterine axis of the fetus is about half the length of its whole body, he drew the natural inference that the length of the fetus would also be about double that of the uterus in which it lies, and therefore measured the length of the uterus, placing one branch of Baudelocque's pelvimeter against the fetal head or breech in the vagina (or rather in that part of the uterus which projects into the vagina) and the other at the spot on the abdomen where the fundus uteri could be distinctly felt, and doubling the number obtained, the actual length of the child was ascertained. On an average he found, in 250 cases, that in the 36th week the child measured 48.3 centimetres in length, and weighed, the weight being computed by analogy, 2,806 grammes;² in the 37th week, 48.3 cm., and 2,878 grms.; in the 38th week, 49.9 cm., and 3,016 grms.; in the 39th week, 50.6 cm., and 3,321 grms.; and in the 40th week, 50.5 cm., and 3,168 grms. Transverse positions were measured in the same manner, the branches of the pelvimeter being placed transversely against breech and head of the fetus in utero. Sutugin (l. c.) substantially agrees with Ahlfeld's measurements, and finds that the height of the base of the uterus is equal to one-half the length of the fetus. Although the practical value of this new procedure still needs the confirmation of time and experience, the facility and painlessness of its application recommend it for frequent trial in all cases where the prognosis or treat-

¹ L. c.

² 2.75. centimetres = about 1"; 30 grammes = $\frac{3}{4}$ i.; about 500 grammes = lb. i.

ment in a measure depend on the size of the child (premature delivery for habitual excessive development of the child at term, contracted pelvis, cancer of the cervix, etc.).

The spontaneous movements of the fetus are frequently excited or increased by the temporary application of cold to the abdomen, not in consequence of the direct transmission of the cold itself to the fetus, but through reflex action from the abdominal integument to the abdominal muscles, which contract and press on the uterus, which in its turn contracts and thereby incommodes the fetus, causing it to protest with hands and feet against the disturbance and to rapidly change its position. I have witnessed this phenomenon hundreds of times, when students, forgetting the rule to warm their hands before examining, proceeded to palpate the abdomen, and produced not only a slight shock to the mother (the avoidance of which heedlessness is not unimportant, especially in fashionable private practice), but also contractions of the uterus, thereby interfering with the examination. I am thus explicit in explaining this to me always simple phenomenon, because Dr. Chadwick (*loc. cit.*, p. 7) says that it is inconceivable that the cold itself should penetrate to the fetus and excite the unwonted activity;" that it is "within the bounds of reason, though improbable," that the reflex nervous current thus excited could influence the uterus and indirectly the fetus, and that he has had "no opportunity of verifying the truth of this assertion as to the application of cold."

We all know how easy it is to excite uterine contractions by merely pressing the uterus through the abdominal walls, which is substantially the same action as that offered by me in explanation of the increased fetal movements after the momentary external application of cold. The observation of the contraction of the muscles of a part in consequence of an irritation of the skin of that same part is of too common, not only every-day, but every-minute, occurrence to need further comment.

A unique case in literature, in which the umbilical cord was detected, by inspection and palpation near term, on a level with the umbilicus, has recently been reported by E. Bidder.¹ The cord crossed the back of the fetus transversely and was easily movable, but could not be slipped over the breech.

¹ St. Petersburg Med. Wochensch., 1876.

It pulsated 152 times to the minute. At birth the cord was found to measure only 30 centimetres.

Dr. Paul Budin, of Paris, has recently¹ described a peculiar "ovarian pain" which he frequently observed during the palpation of pregnant and parturient women, chiefly on the left side, where he distinctly felt an oval transverse body corresponding in size and position to the ovary. Pressure on this body caused intense pain. The round ligament could also be felt. While I have frequently found one or the other ovarian region sensitive to pressure in pregnant and parturient women, I certainly do not recollect having ever detected the ovary by external palpation in that condition, and should scarcely expect to do so, except in a high degree of emaciation of the abdominal wall.

Position of the Child.

By *position of the child* I mean the relation of its longitudinal axis to that of the uterus; if both axes are parallel, the child occupies a longitudinal, if they cross each other, a transverse position.

By *presentation* I mean the relations which (the position, longitudinal or transverse, being fixed) certain parts of the child hold to certain portions of the uterus; thus, when the head is in the lower uterine segment, we have a head; when the breech occupies that situation, a breech; and when the thorax crosses the pelvic brim, a transverse (or thorax) presentation. Various subdivisions, according as the back of the child is turned towards one or the other portion of the uterus, are designated as first or second, being generally known by the name of the group to which they belong, viz., I. or II. vertex, face, breech, footling, or transverse presentation.

In order to avoid mistakes and unnecessary repetition, it may be well to introduce here a synopsis of the different positions and presentations as generally adopted in this country and abroad.

Positions: Longitudinal and transverse.

Longitudinal positions are divided into vertex and face, and into breech or foot presentations, each of which are again subdivided into first and second subpresentations.

¹ Progrès Méd., 9, 1879.

Vertex or occipital presentations :

- I. Left occipito-anterior, L. O. A. Occiput and back turned towards the left side of the mother, right parietal bone presenting per vaginam.
- II. Right occipito-anterior, R. O. A. Occiput and back to the right side, left parietal bone presenting.

Face presentations :

- I. Left frontal; forehead and back to the left side, right cheek presenting.
- II. Right frontal; forehead and back to the right side, left cheek presenting.

Breech or footling presentations :

- I. Back to the left side, left hip presenting.
- II. Back to the right side, right hip presenting.

Transverse presentations :

- I. Dorso-anterior; back towards abdomen of mother. 1st subdivision, head in left iliac fossa of mother, L. D. A. 2d subdivision, head in right iliac fossa of mother, R. D. A.
- II. Dorso-posterior; back towards spinal column of mother. 1st and 2d subdivisions as above, L. D. P. and R. D. P.

Various minor subdivisions, such as the III. and IV. antero-vertex, or occipito-posterior presentations (considered to be merely abnormal rotations or arrest of rotation of the two regular vertex presentations), frontal presentations (rare instances of arrested face-presentations, usually requiring forceps or craniotomy), and complete and incomplete foot and knee presentations, only call for brief mention. The third and fourth face and breech presentations (corresponding to vertex), I omit entirely from this classification, as they are mere steps in the mechanism and have no practical importance.

Longitudinal Positions.—The presence of a large round body in the upper portion of the uterus, as a rule, indicates that the long axis of the latter and that of the child correspond. Should the small parts be also found near the fundus, the probability always is in favor of a head presentation, inasmuch as the arms seldom leave their condition of flexion on the thorax and thus rarely become palpable. The usually easy detection of the hard round head above the symphysis pubis confirms the diagnosis, which would be changed to that of a breech presentation were this same hard body to be felt above the umbilicus.

Occasionally the presenting part is found resting on the iliac fossa, generally on the left side, because of the usual dextral inclination of the fundus, and is then easily movable, as is also the case when it occupies the pelvic inlet previous to the last few weeks before term; as soon as it has descended into the pelvis it becomes more or less fixed and thus serves to foreshadow the near approach of labor.

According to Sntugin,¹ the fetus lies during pregnancy with its back turned posteriorly and either to the right or left side. The back is found turned directly to the side of the mother only in the erect posture, and in the recumbent posture only if contractions have preceded the examination. In the early part of gestation, the position with the back to the right side

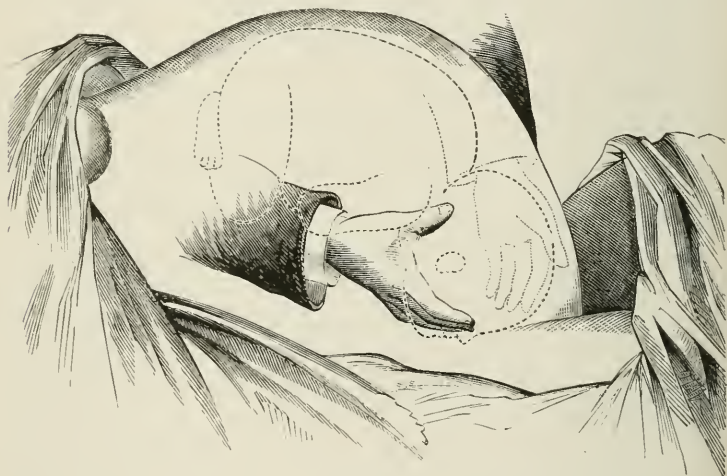


FIG. 4.

occurs more frequently than towards term; near the end of pregnancy, however, the back is found more commonly on the left side.

Not until the head has sunk to the floor of the pelvis during labor, does it withdraw from palpation, and the examining fingers will feel instead the softer and more slender neck. At this stage, however, diagnostic palpation of the presenting part gives way to indagation.

Until recently it was thought possible to detect a *face pre-*

¹ St. Petersburg Med. Ztg., 1875, V., 2.

sensation only by internal examination, after the os was sufficiently dilated to permit the touching of the presenting part; in 1868, however, Prof. Breisky, of Berne,¹ described a method of diagnosing this presentation by palpation, which I have since had repeated occasion of testing and verifying. Instead of feeling on both sides of the symphysis pubis the hard, round, more or less movable body which represents the fetal head, we find on one side a firm, smooth, convex surface corresponding to the forehead and vertex of the child, with a depression immediately above, caused by the back of the neck, and on the other side an indistinct resistance produced by the soft chin, neck, and thorax (Fig. 4). Owing to the peculiar position of the child, its feet are felt, and, contrary to the rule, the pulsations of its heart heard, on the side corresponding to the chin.

These signs thus enable us, not only to detect the actual presence of a face presentation before labor has commenced, but even to determine the side to which the forehead is turned, a not unvaluable piece of information, considering how difficult at an early stage of labor the differential diagnosis of face presentations usually is, and useful in case version should become necessary.

Prof. Spiegelberg says that similar conditions are found in high antero-vertex presentations.

Ordinarily it is not difficult to distinguish the two large round parts of the fetus, the head and the breech; occasionally, however, when the abdominal walls are very thick or rigid, the uterus contracted, or the child small and very movable in a large amount of liquor amnii, it will be found almost impossible to arrive at a definite diagnosis. The hardness and roundness and greater degree of ballottement of the head, the depression of the neck between the head and shoulders, and the absence of the femoral prolongation peculiar to the breech, are the chief distinguishing marks. Fassbender² declares that the parchment-like crackling of the cranial bones, occasionally discernible per vaginam, may under favorable circumstances (certainly only with very thin uterine and abdominal parietes, I should think) also be felt by abdominal palpation, and serve to distinguish the head from the breech in breech and transverse presentations. Sometimes the small size of the child renders the

¹ M. f. G., B. 32.

² M. f. G., B. 33, p. 435.

ischial tuberosities unusually prominent and pointed, and may lead to the breech being taken for the extremities; the ballotement, which the latter never possess, will, however, prevent this mistake.

The two extremities of the fetal ovoid having been found, it is generally easy to discover their connecting link, the *back*, which in longitudinal positions is usually directed either to the left or right side. It may be recognized occasionally by being distinctly palpable, ordinarily only by the greater resistance which it imparts to that side of the abdomen; this sign is so well marked, however, as to be unmistakable. Frequently the back will not be found entirely in one lateral half of the abdomen or turned directly towards one side, but is situated near the median line, more or less in that half of the uterus in which the extremities also are situated; still, on careful examination it will appear that the back points often a little anteriorly, but always towards the side in which the extremities are not, thus clearly designating the subpresentation (I. or II.), and preventing error. It is more common to find the back turned towards the left side in I. subpresentations than the reverse, because of the usual inclination of the fundus uteri, and with it the upper half of the child, towards the right side. If in such cases no extremities can be found, they must be considered to be in the posterior part of the uterus, as is easily explained by the position of the back near the median line. Except in cases similar to those just mentioned, in which the whole fetus occupies one lateral half of the abdomen, usually the right, the body and legs of the child are generally found on opposite sides of the median line.

The *extremities*, characterized by their small size, mobility, and by the quick, short blows they impart to the examining hand, are unmistakable and need no further description.

Footling presentations are distinguishable from breech presentations only with great difficulty by external examination.

Schroeder (l. c.) says that the former may be diagnosed, if the breech has deviated somewhat towards the side where the back is situated, thus in I. subpresentations, towards the left side.

Transverse Positions.—In these the fundus and lower segment of the uterus are empty, the long axis of the abdomen

corresponding generally to its transverse diameter; on either side a large body is palpable, to which the above-mentioned distinguishing marks may be applied, and frequently, although not always, a long hard surface stretching between these two bodies representing the fetal back. Should this hard surface not be palpable, the probability is that the back of the child is turned towards the spinal column, or that the thickness of the intervening tissues prevents its being felt.

In oblique positions, which are merely temporary deviations from longitudinal or transverse positions, the head or breech is found in one or other iliac fossa, or resting on the right or left border of the pelvic brim, and the body of the fetus occupies a more or less oblique position in the uterine cavity. Generally, these positions voluntarily change, when labor commences, into regular longitudinal or transverse positions, and are always particularly amenable to rectification by external manipulation.

Twins.—The diagnosis of the presence of twins, before the birth of the first child, if at all possible, is so only by combined external and internal examination, and can be made with absolute certainty only when, in addition to the detection of a fetal head or breech per vaginam, a second head or breech is distinctly felt through the abdominal walls, or when two distinct and separate heads or pedal extremities are palpable externally, in short, when two absolutely identical parts are present. Occasionally it is possible to define the bodies of the two fetuses more or less clearly by palpation, and at times the great mobility of the parts palpable through the abdominal walls, whereas the presenting part is felt per vaginam to be already fixed in the pelvic cavity, may lead us to the supposition and detection of a twin pregnancy. I once detected twins in Vienna in a case where they had not been suspected by the assistants who examined before me, by comparing the small size and mobility of the presenting head with the large size of the abdomen, which evidently was not due to hydramnios. I asked myself the question: Why should the presenting head be so small, and consequently so movable, and the abdomen so large unless there were hydramnios or twins? Palpation told me that there was no unusual amount of liquor amnii present, consequently there must be two fetuses in utero. I

hazarded the diagnosis, and was gratified at hearing the next morning that the woman had been safely delivered of twins. In general, the size and shape of the abdomen, the longitudinal furrow in the median line (usually merely theoretical), the seeming multiplicity of small members, the exceedingly active, ubiquitous motions of the child, the sensations of the mother, even the hearing of the fetal heart-sounds at different spots of the abdomen, are all uncertain and treacherous signs compared with the detection of two identical parts. Of the numerous cases of twins which I have seen either under my own care or in various hospitals, only a very small minority have been detected before the birth of the first child, notwithstanding the customary careful external and internal examination. That the recognition of the presence of three or more fetuses in utero is possible only under most exceptional and favorable circumstances is evident.

The only instance, so far as I am aware, mentioned in literature of the diagnosis by palpation of triplets is reported by Dr. Pinard.¹ The careful palpation of the very much distended abdomen revealed the presence of three heads, one in the superior strait, another in the right iliac fossa, and a third very movable and above the umbilicus. This fact was so clear that the diagnosis of triplets was unhesitatingly made, and confirmed at the confinement three months later. Two distinctly separate fetal heart-sounds could only be heard, one to the left below the umbilicus, the other to the right side above. In a case of triplets observed by me, the presence of a second or third child was not suspected until the preceding one had been expelled. This was in a great measure owing to the immense accumulation of adipose tissue in the abdominal walls.

PALPATION AFTER DELIVERY.

Immediately after the expulsion of the child, the palpating hand shows us the uterus diminished to less than one-half its size during labor, reaching not quite up to the umbilicus and frequently presenting an irregular outline. This irregularity manifests itself by a greater prominence of one or the other cornu, and denotes the site and the non-detachment of the

¹ *Annales de Gynécologie*, Jan., 1877.

placenta. During the expression of the placenta, the uterus contracts proportionately, and immediately after the expulsion of the placenta is felt as a hard, smooth ball, reaching scarcely midway between umbilicus and pubes. Within several hours after delivery, however, the uterus again expands somewhat, rises out of the pelvis, and the fundus is then felt at about the same altitude as before the expulsion of the placenta, generally slightly turned towards the right side. Slowly and gradually the uterus decreases in size in the course of normal involution, and at the end of the second week the fundus still projects 5.2 cm.; at the end of the third week, 4.6 cm. above the symphysis pubis. Not until the end of the second month may the uterus be considered as restored to its normal position and weight, when, although it still projects about 3 cm. above the symphysis, it is no longer palpable by the external hand alone.¹

A distended bladder or rectum may displace the uterus to one side, generally the right, or cause the fundus to reach higher than normal.

The flaccidity of the abdominal parietes after delivery will frequently permit the palpating hand to detect abnormalities and tumors of which no previous suspicion was entertained. Thus I have recently had a case in my service at Maternity Hospital, in which a large subperitoneal fibroid was detected in the left cornu after delivery, and another in private practice at present, in which my palpating hand accidentally discovered a firm tumor in the left hypochondriac region, which, from its peculiar form and location, I am constrained to consider a floating kidney. The existence of either tumor had never been suspected before.

The importance of carefully palpating the abdomen during the lying-in state is obvious after the above remarks, and when we consider the frequent distention of the uterus with coagula during the first twenty-four hours succeeding delivery. I never omit to map out the fundus uteri with my hand at every visit to a puerpera during the first week post partum. Almost without exception the round and ovarian ligaments and Fallopian tubes can readily be felt at their points of departure from the uterine cornua, and occasionally the ovaries them-

¹ Garrigues, "When shall Lying-in Women leave their beds?" *Proc. Med. Soc. Co. Kings*, Oct., 1877.

selves may be palpated in very thin subjects. The pulsations of the abdominal aorta can invariably be felt through the abdominal walls above the fundus uteri, and the vessel be compressed against the vertebral column, a procedure to be remembered in case of post-partum hemorrhage.

COMPLICATIONS OF PREGNANCY AND PARTURITION REVEALED BY PALPATION.

The death of the fetus during pregnancy is not recognizable with certainty, but may be suspected, if the palpating hand discovers an unusual flabbiness and compressibility of the abdomen in contrast to its former firm and elastic feel, if the motions of the child are not distinguishable, if its body remain passively in any spot to which it is pushed and thus gives the impression of an inanimate body, if its head feels unusually soft and flaccid (unreliable), and lastly, if with all these signs the fetal heart-sounds also are inaudible. The mere absence of the heart-sounds at any one examination without any additional evidence is no proof whatever of the death of the child, as will be more distinctly stated hereafter.

Uterine contractions, even when not perceptible to the patient, are easily recognized by the palpating hand before, during, and after labor, and the difference in nature and degree of the pains (so-called false or true, partial, weak, spasmodic, tetanic), or their entire absence (inertia, atony, exhaustion, paralysis, either general or partial of the uterus), determined without difficulty—a knowledge of vital importance for treatment and prognosis.

The size of the fetal head can only be approximatively ascertained by palpation. In cases where the parturient canal is more or less contracted by deformity of the bony pelvis, disease of the cervix (carcinoma), or uterine tumors (fibroid), it is of great importance to have at least a fair idea of the size and compressibility of the fetal head, and this can be gained by careful and practised palpation, together with vaginal exploration and a comparison of the general dimensions of the child. External examination in such cases will teach us more about the prognosis and treatment, whether the latter is to be manual or instrumental, or whether the delivery is likely to be terminated by the unaided efforts of nature.

Hydrocephalus may occasionally be diagnosticated by palpation, if the head is found to be unusually large, comparatively soft, and even faintly fluctuating, and if, in a normal pelvis, it remains above the brim in spite of energetic uterine contractions.

In rupture of the uterus during natural delivery, palpation gives us probably the most positive information. If the laceration is sufficiently extensive, the fetus usually escapes into the abdominal cavity, either partly or wholly, and is then felt with much greater distinctness than when still in the uterus, which organ contracts and occupies the side of the abdominal cavity opposite that containing the fetus. The appearance of the abdomen in well-marked cases is almost characteristic, one side showing a distinct rounded tumor, the contracted uterus, which is much smaller than when it contained the fetus, and the other the body and limbs of the child, the latter in thin subjects especially appearing as though they were covered only by the skin. A more or less defined depression separates the uterus and the fetus. "When the fetus does not thus escape, the fundus uteri commonly falls to the opposite side to that in which the rupture has taken place, owing to the local paralysis of the latter" (Chadwick, l. c.). Later on the uterus becomes more relaxed, and blood serum and liquor amnii may collect in and distend the dependent portions of the peritoneal cavity.

A new symptom of rupture of the uterus recognizable by inspection and palpation was witnessed by Tully¹ in a case at the Maternité in Paris in 1867, viz., the appearance of "a voluminous tumor just above the pelvis, resembling the distended bladder, but more clearly defined, appearing to be filled with a gelatinous mass." There was no other sign of rupture, but after the version and delivery of a dead child, at the autopsy a small circular perforation and a large rent were found in the anterior wall of the neck, the latter communicating with a large subperitoneal cavity filled with coagula—the suprapubic tumor before death. Hecker corroborates this symptom, and says that it may appear in the hypogastric or inguinal region or in the vagina. Its occurrence in the last-mentioned locality was observed recently by Dr. R. J. Preston, of Abingdon, Va.²

¹ AM. JOUR. OBST., May, 1869.

² Virg. med. Mthly., Dec., 1874.

Dr. John S. Parry¹ mentions "the appearance of a fluctuating tumor over the pubis before the death of the patient," in a case of rupture of the uterus witnessed by him. The significance of the suprapubic tumor was not appreciated until post-mortem. The importance of this symptom, as indicating the occurrence of a possibly as yet slight uterine perforation, which may be prevented from increasing by the timely extraction of the fetus, is obvious, and its proper appreciation may enable us to diminish the mortality of this accident.

Abdominal tumors, such as uterine fibroids, ovarian cysts, etc., are usually accessible only to palpation, and may be recognized by the irregularity which they impart to the general outline of the abdomen, increasing its breadth or size, or displacing the uterus if they be large, or destroying the smooth contour of the womb if they be situated in its substance.

Extrauterine Fœtation.—The diagnosis of this condition is so uncertain, even with the aid of all the means at our disposal, that it will be possible to detect it by external examination only when a distinct lateral tumor is palpable, evidently unconnected with the uterus, in which (provided, of course, the gestation be sufficiently advanced) the fetal parts are plainly to be felt and the fetal heart-sounds clearly audible. The uterus can be felt in such cases only in extreme emaciation, as its enlargement never corresponds in degree with the period of pregnancy. Percussion may in the earlier months aid us in fixing the boundaries of the ovisac and thus corroborating the previously suspected diagnosis.

OBSTACLES TO PALPATION.

There are various conditions, temporary or permanent, which more or less interfere with the proper performance of palpation.

Tension of the abdominal walls, more common and continuous in primiparæ, is also found as the result of voluntary contraction of the abdominal muscles in multigravidæ, and is then usually overcome by the precautions mentioned under "*Position of the woman*." Occasionally it will be found an insuperable obstacle, and percussion may then be employed as a meagre substitute.

¹ AM. JOUR. OBST., Aug., 1873.

Muscular contractions of the uterus utterly preclude satisfactory palpation or auscultation. When they are seen to be easily excited, the examination should be made with unusual care and delicacy, and, of course, only in the periods between the contractions. The latter are also aroused by voluntary contractions of the abdominal muscles, which must be prevented by requiring the woman to keep her mouth open or count in order to prevent her from straining.

Unusual tenderness of the abdomen is generally only partial, in spots where the constant kicking of the child has produced a feeling of soreness, or where the fetal head presses firmly against one or the other inguinal region. This sensitiveness is rarely sufficient to preclude careful palpation, although there are rare cases in which there appears to be such a degree of hyperesthesia of the peritoneal envelope of the uterus as to render abdominal palpation entirely unbearable. This abnormal sensitiveness is thought to be due to a chronic state of subacute peritonitis caused by the hyperdistention of the uterine peritoneum during pregnancy, and usually disappears towards the end of gestation.

Hydramnios, if at all sufficient to warrant the name, is almost always an insurmountable obstacle to palpation. The hand can make but little impression on the distended elastic abdominal walls, and the only information of the presence of a fetus will be imparted by the occasional thump of one of the large parts of the child, head or breech, against the hand, particularly if the presenting part be pushed up per vaginam. In lesser degrees of distention, the fetus is extremely movable, ballottement is unusually distinct, and fluctuation may sometimes be felt.

An excess of *adipose tissue* in the abdominal walls is one of the greatest obstacles to successful palpation, particularly during the earlier months, and, although usually diminished somewhat towards term by the distention of the abdomen, is not entirely overcome by any means at our disposal.

Ascites and flatus will rarely interfere seriously with palpation, because in the former the fluid by its gravity seeks the deeper portion of the abdominal cavity, and the intestines, distended by the latter, will only serve to displace the uterus, generally to the right side. It is principally by increasing the

tension of the abdominal walls that they prove an obstacle. Their presence is easily recognized by percussion. Simulated pregnancy, *graviditas nervosa*, owes its origin to the enlargement of the abdomen by the intestines distended by flatus, the movements of which, together with the spasmodic contractions of the abdominal muscles, may closely resemble the fetal motions and have deceived even practised observers.¹

C.—PERCUSSION.

This is the least valuable of the four modes of procedure mentioned, and will generally serve only to strengthen the diagnosis formed by the other three. Through it we ascertain the degree of distention of the bladder, which certainly is of importance both during examination and labor as well as in the puerperal state, and is a prominent symptom, indeed the only external one in retroversion or flexion of the gravid uterus; as also the presence of feces in the colon. Should the thickness of the abdominal walls or their rigidity prevent successful palpation, we can detect the boundary of the uterus and the height of the fundus through percussion, a knowledge which can occasionally be acquired as early as the fourth month of pregnancy, especially with an empty bladder and an anteverted uterus. In this latter respect percussion is not to be undervalued, otherwise it is of but little practical value. The relations of the bladder and uterus in the earliest months of pregnancy, and the similarity in percussion-sound of uterine substance, the fetus, and the liquor amnii render such results as those claimed by Piorry, who professed to be able to diagnosticate pregnancy as early as the second month, and even the position of the fetus in utero during the later months by means of the plessimeter, doubtful and incredible.

(To be concluded in the next number.)

¹ In this chapter on "Palpation," I have of necessity repeatedly quoted the substance, if not the words, of Chadwick's excellent paper mentioned above, because I found it at times impossible to improve either on his classification or description.

A CASE OF CONGENITAL DIAPHRAGMATIC HERNIA, WITH
REMARKS.¹

BY

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(With one lithographic plate.)

ANNIE M., aged 20, a primipara, was confined at the Woman's Hospital of Philadelphia, October 19th, 1878. She stated that her health had been good previous to, as well as during the pregnancy, and that she had not had any falls or blows. The date of the last menstrual epoch was not known. The membranes ruptured at 5 A.M. The pains, which did not begin until noon, were not peculiar either in character or duration. At 9.43 P.M. of the same day, a female child was born. It was well developed, weighed eight pounds, and measured fifty-one and a half centimetres in length and eleven centimetres across the shoulders. The head measured eleven centimetres in its occipito-frontal diameter, thirteen and a half centimetres in its occipito-mental diameter, nine centimetres in its bi-parietal diameter, and thirty-three and a half centimetres in its greatest circumference.

Respiration was established without difficulty, and nothing unusual was noticed about the child until one hour after its birth, when the lips suddenly turned blue, and the respiration became slow and labored. Resort was had immediately to artificial respiration. No undue force was employed in the manipulations, as the condition was apparently hopeless, so that the efforts at resuscitation were not as vigorously maintained as usual in such cases. The respirations became less frequent, until they ceased entirely ten minutes after the beginning of the attack. When this condition of cyanosis was first noticed, there was no pulsation in the cord, and the heart's action, though feeble, was regular. During the efforts to resuscitate the child it was noticed that the hepatic region was somewhat more prominent than usual. It was considered, however, a simple case of asphyxia, and the post-mortem examination was made from motives of general interest rather than for the discovery of any special condition.

Upon opening the thorax, coils of intestines were found in the left pleural cavity, as has been very well shown by the artist in the accompanying plate. The left lung was collapsed and pushed up-

¹ Read before the Obstetrical Society of Philadelphia.

wards and backwards. The heart was found to the right of the median line, and the right lung was pushed to the side, so that it was almost concealed by the pericardial sac. Upon further examination, there was found in the left thoracic cavity the spleen, the pancreas, the stomach, and the entire intestinal tract, with the exception of a small loop of the duodenum, the descending colon, and the rectum. The liver had fallen downwards and forwards, so that it occupied almost the entire abdominal cavity. The left side of the diaphragm was deficient, with the exception of a rim two centimetres in width around the anterior margin of the thorax. The openings were all perfect. The cardiac extremity of the stomach lay just above the diaphragm, being separated from the esophageal opening by a narrow band around which the esophagus curved immediately upwards after entering the abdomen. The stomach was found in the pleural cavity, in such a position that the greater curvature was directed upwards, and both extremities turned downwards. The upper part of the duodenum, for about six centimetres of its length, formed a loop which passed through the hernial aperture into the abdomen. The descending colon lay to the left of the duodenum in the preternatural opening of the diaphragm. The normal relation of the abdominal viscera to each other was preserved, but the stomach, pancreas, and liver were found beneath instead of above the intestines. The margin of the diaphragmatic aperture was smooth and bore no trace of laceration. The opening was undoubtedly congenital, but the hernia could not have existed at birth, for there was no difficulty in the establishment of the respiratory function. It is probable that there was a gradual protrusion of the abdominal organs with each successive expansion of the chest walls, until further action of the lungs became impossible, and the child's struggles for breath, and the efforts at artificial respiration favored the sudden dislocation of so many abdominal viscera.

Bouchut reports a case of cyanosis appearing for the first time in a child two days old. As the vesicular murmur was still audible upon the left side of the chest, it was supposed that the child was suffering from bronchial catarrh. Cyanosis became more and more marked, and death occurred on the thirteenth day. Upon autopsy, the left lung was found partially collapsed and pushed upwards, while in the lower part of the left pleural cavity the entire intestinal tract was found, with the exception of the duodenum and descending colon. The stomach retained its normal situation. The liver was displaced downwards and to the right.

A case of congenital diaphragmatic hernia was reported by Dr. Balfour before the Edinburgh Obstetrical Society, June

10th, 1868. In that instance the labor was tedious and was terminated by the use of forceps. Although the extraction was easy, the child gave only a feeble gasp, and all efforts at resuscitation were unavailing. Upon autopsy, an opening was found in the left side of the diaphragm through which the stomach, the spleen, the pancreas, a portion of the left lobe of the liver, the small intestines, cecum, appendix vermiformis, and the ascending and transverse colon had escaped into the left pleural cavity. The opening in this case was very large, for, with the exception of a few fibres, the entire left side of the diaphragm was deficient.

Keiller, at a meeting of the same society, alluded to a case similar to that of Balfour's, which occurred in Dundee some thirty years before. Death resulted from eclampsia on the ninth day, and the left side of the chest was found filled with the abdominal viscera.

Dr. Heywood Smith, at a meeting of the London Obstetrical Society, July 2d, 1873, exhibited a specimen of diaphragmatic hernia. The child was a male, born in the British Lying-in Hospital, May 31st, 1873, and lived three-quarters of an hour. Upon post-mortem examination the liver was found in its normal position and the stomach lay perpendicularly. In the left side of the thorax was found the entire intestinal tract, with the exception of a loop of the small intestine and the lower part of the large intestine. The heart was pushed towards the right lung and the left lung was compressed by the intestines. The hernial opening was in the left posterior part of the diaphragm and was only large enough to admit the top of the little finger.

Dr. Copeman, in a paper read before the Norfolk and Norwich Pathological Society, and reported in the *Association Medical Journal*, March 2d, 1855, refers to the following case of phrenic hernia in a child, which was recorded by Dr. Macauley in the *Medical Observer and Enquirer*, vol. I., page 26. A full-grown male child was attacked with difficulty in breathing, and died an hour and a half after birth. The mother had sustained no apparent injury, although she had fallen three times during the seventh month of pregnancy. At the post-mortem examination, the stomach, greater part of the intestines, spleen, and part of the pancreas were found in the

left side of the thorax. The left lung was very small and the heart was pushed to the right side. The esophagus passed through the diaphragm, and ascending through the hernial aperture, which was about an inch from the esophageal opening, terminated in the stomach which lay just above the diaphragm. In the hernial opening was the pyloric extremity of the stomach. The duodenum descended into the abdomen in the form of a loop, where it received the biliary and pancreatic ducts, and then ascended into the thorax.

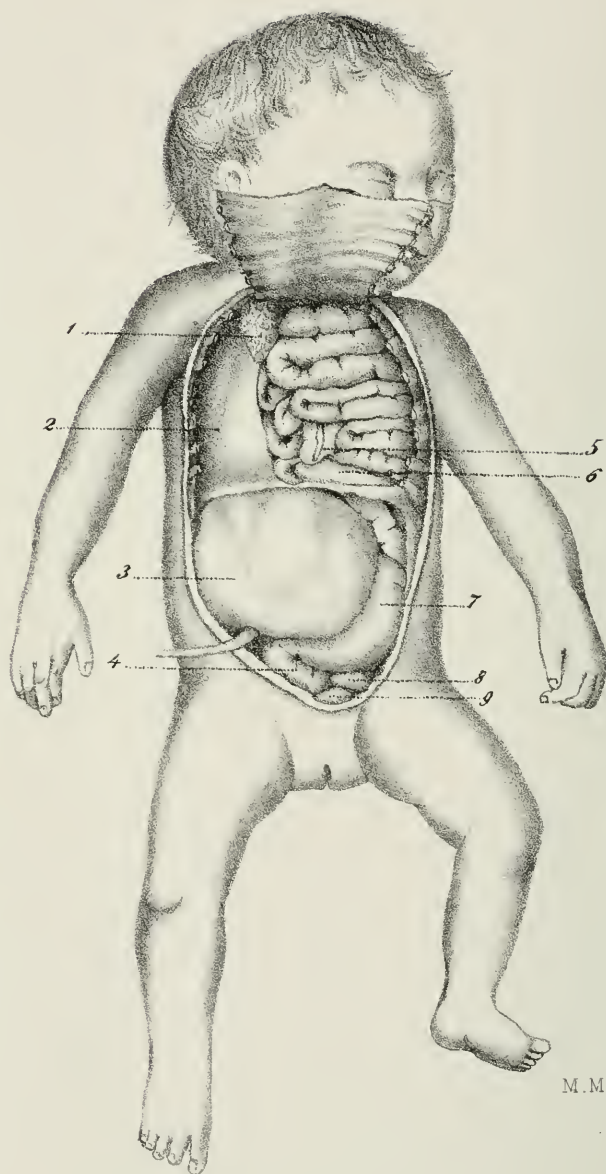
Another case, recorded by Dr. Macauley and referred to by Dr. Copeman, was of a female child, who breathed with great difficulty and died three-quarters of an hour after birth. In that case the small intestines and part of the liver had passed into the right cavity of the thorax, through an aperture in the right and posterior part of the diaphragm.

In one-third of the cases of diaphragmatic hernia investigated by Dr. Bowditch,¹ the lesion existed at birth, and in twenty-six of these congenital cases the result was as follows: eleven died two hours after birth, six died at the age of two years, one lived to the age of seven, and eight reached adult years.

According to Foerster,² it is only in monstrosities that the diaphragm is entirely absent, but in children, otherwise well developed, there may be a partial deficiency. In the greater number of cases he found the apertures to vary in diameter from one to four inches, yet in some instances the entire one-half of the diaphragm was absent. The margins of the openings were round and exhibited no trace of laceration. In some rare instances no aperture was found, the diaphragm forming a pouch or hernial sac over the protruded viscera. The size of the hernia was dependent upon the extent of the lesion; in some cases the stomach, spleen, part of the liver and the intestines were protruded, while in other instances the intestines alone had escaped. Death usually resulted a short time after birth, and was caused by the pressure of the abdominal viscera upon the heart and lungs. In some cases, notwithstanding the interference to respiration, the patients attained adult years. He believes that the defect of the

¹ A Treatise on Diaphragmatic Hernia, 1853.

² Die Missbildungen des Menschen, 2te Ausgabe, Jena, 1865.



CONGENITAL DIAPHRAGMATIC HERNIA (BROOMALL.)

diaphragm is due to an arrest in the development, rather than to an injury to the diaphragm after its complete development.

REFERENCE TO PLATE.

- | | |
|---------------------|--------------------------|
| 1. Left lung. | 5. Appendix vermiformis. |
| 2. Pericardial sac. | 6. Stomach. |
| 3. Liver. | 7. Colon. |
| 4. Sigmoid flexure. | 8. Uterus. |
| 9. Bladder. | |

TREATMENT OF INFANT DIARRHEA AND DYSENTERY.

BY

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OF all the deaths in the first year of life forty per cent, in round number, are due to diseases of the digestive organs, and half as many to such of the respiratory organs. In the second year, the main cause of death changes completely, for of all the forty-five deaths taking place in that year, but nine are due to digestive, and thirty-six per cent to respiratory disorders. Thus in the first year, stomach and intestines, in the second, bronchi and lungs, are the sources of high death-rates. The respiratory organs are better protected, usually, in the first year, and the digestive organs treated more improperly. Such infants as survive the first are exposed to the same parental ignorance and carelessness concerning the requirements of the respiratory organs during the second.

Mortality diminishes with every day of advancing life. Every additional hour improves the baby's chances for preservation. Almost one-half of the infants dead before the end of the first year, die before they are one month old. Thus the causes of disease are the more active the earlier they are brought to bear upon the young with their defective vitality.

Two grave conclusions are to be drawn from this fact. The first is, that the diminution of early mortality depends on

avoiding diseases of the digestive organs by insisting upon normal alimentation. This is principally important in the first few months. While breast-milk has been shown to lower infant mortality through the whole first year, it does so more in the first few months. Thus, though an infant may not be fed on breast-milk through the whole normal period of nursing, a great gain, indeed, is accomplished by insisting on nursing, though for a limited time, perhaps two months only. There are but few mothers but will be capable of nursing during that brief time, and none who ought to be spared the accusation of causing ill-health or death to her baby if she refuses to nurse it at least through the first dangerous months. The second conclusion, resulting from many figures, is this, that the dietetic problems and rules for the infant concern the digestive organs mainly, so much so, indeed, that infant dietetics and the dietetics of the infant digestive organs appear nearly identical.

It is true that in this city we meet with a high mortality, even in children of more than a year. The second summer is regarded with awe and fear amounting to superstition. In fact, public opinion looks for a higher mortality in the second than in the first summer. The fallacy of this assumption can be easily corrected by the statistical reports; and the high mortality rate itself could be easily reduced by such parents as would feel convinced that it is external causes which kill their children, and not the natural course of development. The second summer is the period of danger in part only because of the heat of the season, but mainly of the errors in feeding. Conscientious and intelligent families in good circumstances are not apt to lose their infants in their second summer.

Nor is it necessary that here, and on this occasion, I should insist upon the danger incurred by the belief that diarrhea—a pathological condition—is a normal attendant on and a relief of a physiological process such as dentition. This much is certain, that very few, if any, popular beliefs have been more destructive than this, that an intestinal catarrh must be left alone, no matter from what source it originated.

Healthy infants have a normal tendency to loose, liquid, or semifluid evacuations from the bowels. The causes lie partly in the condition of the intestinal tract, and partly in the nature

of the normal food, viz., breast-milk. The peristaltic movements are very active; the young blood-vessels are very permeable; the transformations of surface cells very rapid; the peripheric nerves very superficial, more so than in the adult, whose mucous membrane and submucous tissue have undergone thickening by both normal development and morbid processes. In the young infant, the peripheric ends of the nerves are larger in proportion than in the adult, the anterior horns of the nerve-centres are more developed than the posterior ones. Thus the greater reflex irritability of the young, particularly in regard to intestinal influences, is easily explained. Besides, the action of the sphincter ani is not quite powerful, the feces are not retained in the colon and rectum, and no time is afforded for the reabsorption of the liquid or dissolved constituents of the feces. Moreover, the frequency of acids, sometimes normal, in the small intestines gives rise to the formation of alkaline salts with purgative properties. Hoppe-Seyler found free acids in the feces of dogs and adults. Wegscheider met them in nurslings who received nothing but mother's milk. An explanation of this occurrence may be this, that the quantity of food is often too large, but it is just as probable that the amount of digestive fluid is too small. For the diastatic effect of the pancreas is limited at that as at any other age.

The nature of breast-milk, even when absolutely normal, is such as to facilitate frequent, large, and fluid evacuations.

First, as to its fat. Careful investigations led Wegscheider to the following important results: *fats are not completely absorbed; one part leaves the intestine in a saponified condition; a second part, as free, fatty acid; a third, as fat in an unchanged condition.*

Where no food is given but mother's milk, which contains fat in proportionately smaller quantities than cow's milk, and finely suspended and easily absorbed, *a good deal of fat is eliminated* without any change.

What has been called detritus in the feces is not all undigested casein, but, on the contrary, it is mostly fat, and very probably remnants of intestinal epithelium. This milk detritus, so-called casein, and mainly consisting of olein, margarin, and stearin, is not soluble in water, acids, or alkalies, but very soluble in alcohol and ether.

Practically this *fact* is of the very greatest importance. Fat is not completely absorbed under the most normal circumstances. Fat-acids are easily formed, and accumulate to such an extent that they are found in moderate quantities in even the healthiest nurslings. Superabundance of fat-acid is a common derangement of digestion and assimilation, and it impedes the previously normal secretion of other digestive fluids. Thus there is a *plus* of fat, even in the normal food of the nursling, the breast-milk.

The conclusion, then, which I will record here at once, is that we have to be *very careful in the preparation of artificial food*. *It is almost certain that we give too much fat; it is scarcely ever probable that there is too little*. Therefore the addition of cream is reprehensible, no matter in what shape. Whenever cream and cream mixtures have been recommended, inventors and backers have always made the statement that such mixtures are, "as a rule," well tolerated. It is a doubtful praise, however, that food should be simply well tolerated, "as a rule." The fact alluded to has probably been the cause why Liebig has, in his artificial food, only *forty* per cent of the fat contained in mother's milk.

Thus in the most normal milk there is more fat than required. Whenever changes set in, the disproportion can be greater yet. For milk is no stable article, its chemical composition permits of a great latitude indeed. Normally it is the result of transformed glandular substance.¹

The mammary gland is no filter, through which the serum of the blood, or the solutions of salts, or the transformed foods are rendered accessible to the hungry young. The quality and quantity of milk depend upon the development of the gland. Milk is not the product of the action of the cells; it is the transformed cells, the very organ. Thus the nursling is the veriest carnivorous animal. As long as the epithelium has not undergone a total change, the secretion is not milk, but colostrum, with its large globules. The character of the gland influences the milk, much more than food. The latter influences milk only by building up the gland, the cells of which

¹ Compare "The Influence of Menstruation, Pregnancy, and Medicines on Lactation," by A. Jacobi, M.D., in *AMER. JOUR. OBSTET.*, July, 1877.

receive materials of different kinds, the principal of which is albumen.

In accordance with this, the nature of milk is beautifully illustrated by its chemical composition. Its ashes are tissue ashes, not those of plasma, for they contain much potassa and phosphate of lime, but little chloride of sodium.

In the first period of lactation the glandular transformation is not yet accomplished. The secretion is of a different nature. It requires days to exhibit casein. Until then the protein shows the nature of albumen. At the same time the percentage of butter and salts is very high indeed, both of which explain the *laxative* character of colostrum. No less do macroscopic and microscopic observation convey the impression of its being incomplete. It is yellowish, thickish, the fat globules are large, unequal, sticky, and mixed with epithelium almost unchanged. There is less potassa and more soda than in normal milk, approximating it to the chemical character of plasma. Besides, colostrum of the cow has not unfrequently been found to contain blood and to coagulate when being boiled. Thus colostrum is more like a transudation than a glandular secretion. Such colostrum is not only met with in the first week after confinement, but in disturbances of the general health, in anemia, fevers, pregnancy, or advanced age of mother or nurse. Also when the gland itself is insufficient, or the woman too young, or slowly convalescent, or neurotic and liable to vaso-motor disturbances. The administration of such milk disturbs the health of the infant through the bringing on of gastric or *intestinal catarrh*.

Thus there is no stability in the nature of breast-milk, and very much less in the human than in the animal female, for obvious reasons. Its constituents and effects may even change from hour to hour, from day to day, sometimes it will be milk, sometimes milk with transuded serum.

That a mere transudation should contain all sorts of material circulating in the blood-plasma is evident. Therefore colostrum is apt to transfer to the nursling the liquid constituents of the mother's blood, no matter whether normal or abnormal, beneficial or injurious, organic or inorganic. The reports of infants harmed by the mother's opiate, influenced by her taking mercury, belong, therefore, mostly to the earliest period of

lactation, or to a period of sickness or debility on the part of the woman. The more normal the mammary secretion the less the danger in this respect. Very few persons, however, are always in undisturbed health.

Thirdly as to sugar. It is abnormally plentiful in colostrum, and in some milks, at times, its percentage is lower than normal. In the former it is purgative, in the latter its absence one of the causes of constipation. Thus the addition of a piece of sugar—which need not be milk sugar—to breast-milk is apt to heal constipation in the infant. I dissolve it in the smallest possible quantity of water, say a teaspoonful, and let the baby take it before each nursing.

Fourthly as to casein. When present in an abnormally high percentage, it may act in two ways. It will either constipate, particularly as the high percentage of casein and a low one of sugar go hand in hand, mostly—or by remaining undigested, and acting as a local irritant, thereby producing diarrhea. In these cases of diarrhea the stools are mixed with white flocculi, small or large, sometimes in astonishing quantities and for a long period. The treatment of such diarrhea is by no means very simple, unless the breast-milk is changed. When such a change cannot take place, I add oat-meal gruel or barley-water in such a manner, that a few teaspoonfuls of it are administered to the baby before each nursing. I shall return to the consideration of this proceeding.

The natural food of the infant being sometimes a cause of tendency to diarrhea, and of actual diarrhea, the administration of artificial foods must necessarily be inferred to threaten a real danger. Let us examine some of the articles of food mostly used for the young.

Goat's milk ought to be rejected because of its large percentage of fat, not to speak of its odor which at times is very disagreeable.

Cow's milk contains more butter than human milk. If the latter, as stated above, is not entirely digested, cow's milk butter will certainly leave even more remnants to encumber the intestinal canal.

The reaction of human milk is alkaline, that of cow's milk rarely to the same degree. It is apt to become acid soon

after milking, and has been found to exhibit acid reaction while still in the udder.

But the main difficulty lies in the large percentage and in the nature of the casein of cow's milk.¹

The casein of cow's milk and the casein of woman's milk are two different substances. When isolated by alcohol, by which both are thrown out of their combinations to a certain extent, the chemical properties are found to differ widely. Thus obtained, cow's casein, when moist, is white; when dry, yellowish. It reddens litmus-paper, and acidulates water, in which it is soluble in the proportion of 1-20. Woman's casein, however, in its moist condition, is yellowish, alkaline, or neutral, and dissolves almost entirely in water, the solution being of neutral reaction. Vierordt and Biedert found the quantity contained in the two milks to differ, there being less in woman's milk than in cow's milk.

When exposed to artificial gastric juice they also act differently. In a surplus of it woman's casein is dissolved in a short time; cow's casein in twenty-four hours. Mineral acids, lactic acid, acetic acid, tartaric acid, Epsom salts, phosphate of lime in solution, coagulate cow's milk in hard and dense masses; not so human milk. Solutions of both kinds of casein in alkalis show many similar properties; but the sediment produced by the addition of lactic acid can yield essential differences. Thus there is a chemical as well as a physical difference between the two species of casein. Although their relation to artificial gastric juice has not been found to differ to that extent by Dr. C. P. Putnam, of Boston, it is upheld by a number of other observers, and the fact is beyond doubt that pure cow's casein is very much less digestible than human casein. At all events, it should be so considered, and infants should have only as much casein as proves digestible. One of the alleged means of combating the improper effect of casein is to increase the relative amount of fat by adding it to the food. It is true that in this way a more proper relation of the two can be obtained, but certainly no more proper relation of the two to the insufficient condition of the infant digestive organs.

¹ The following page, and some other statements in this paper, may be found in an essay of the author's incorporated in the forthcoming volumes on Hygiene, to be edited by Dr. A. Buck, and published by Wm. Wood & Co.

Besides, the addition of cream to either casein or fresh milk has something very doubtful about it, as at the time when cream has formed upon milk, by simply allowing it to stand, the formation of lactic acid is going on all the time. At all events, no addition we know of can render cow's casein more digestible than Nature made it, and the only thing which can be obtained by any sort of manipulation of the milk is to make it less injurious. Perhaps, however, the plan upon which Dr. J. Rudisch has acted may recommend itself to the attention of the practitioner. In order to make cow's milk more digestible, he has introduced into my practice a mixture which promises to be of great value in all those cases in which coagulability of the milk is the prominent obstacle to its usefulness. The mixture suggested by him, and used by us up to this time mainly in diseases of adults, such as anemia, gastric catarrh, ulcer of the stomach, slow convalescence, etc., is the following: to one pint of water, one-half teaspoonful of officinal dilute muriatic acid is to be added. To this mixture add one quart of raw cold milk; mix the two liquids thoroughly and then boil for ten or fifteen minutes. I have found this preparation to be very digestible, and well tolerated by very feeble digestive organs. Not only clinical experience favors this preparation, but direct experiments also. When "liquid pepsine" is added to common milk, coagulation takes place very rapidly, and in thick coherent masses. The same liquid pepsine, when added to the above mixture, produces so slight a coagulation that it can scarcely be observed. The coagula also are small, and do not adhere firmly to each other. Essence of rennet coagulates common milk speedily and completely; the above mixture more slowly and not so completely. The coagulation of common milk exhibits, after a certain time, thick, dense, and firmly coherent masses. The coagula produced by the above mixture are fine, loose, and are easily separated when the liquid is shaken.

Valuable as this preparation of cow's milk may prove in future, there is one method for making cow's milk more available, which is at once simple and effective. No cow's milk ought to be administered without the addition of chloride of sodium. Not only cow's milk, but also—and even much more so—farinaeous admixtures to cow's milk require its presence in the food.

The method of preparing condensed milk with the admixture of such great quantities of sugar as to yield from thirty-nine to forty-eight per cent of sugar in its solid ingredients is a well-known process. With regard to this preparation, Kehrer says that when sufficiently diluted it readily induces the formation of lactic acid, and that delicate children will not thrive on it. In such cases he deems it necessary to add barley-water or oatmeal gruel as well as antacids. Fleischmann also accuses it of causing a predisposition to thrush and diarrhea. He lays stress upon the fact that, even when it has been properly diluted, the proportion of the protein compounds to the carbohydrates is diminished, and thereby its nutritive value impaired. My own experience with condensed milk, which has been rather extensive, has led me to learn that, when diluted simply with water, even though to the proper degree, it is apt to be followed by disagreeable results; although the influence of the large amount of sugar does not operate in the manner as above alleged. For the sugar which is added to condensed milk is not the easily decomposed milk-sugar. Yet catarrh of the stomach and bowels is a frequent result of its use. I have seen few children enjoy undisturbed health who were fed exclusively upon condensed milk. Those, however, who take it mixed with a certain proportion of barley-water, either regularly, as I recommend, or in cases of temporary necessity, as advised by Kehrer, thrive quite well. I cannot say that I have been able to discover any material difference, whether condensed milk, or good ordinary city milk, was given in this way. But it should not be forgotten that barley-water is a more desirable addition to the mixture than oatmeal gruel, because of the laxative effect which the latter may have. If the condensed milk be given in this way, we need not fear a repetition of Daly's experiences. He found that children took the condensed milk readily, and grew fat; but in case they fell sick, they showed but slight endurance; they began to walk late; their fontanelles were slow in closing, and other signs of rhachitis showed themselves.

The preventative treatment of diarrhea, depending on defective alimentation, consists in so changing and arranging the milk used for babies that the casein will not coagulate in large lumps, and thus become more digestible. That object can be

obtained by adding such farinaceous food as does not contain much starch. Some little starch is digested from the first days of life, the parotid having diastatic effect; in a few months after birth such vegetables as contain starch in moderate, but not overwhelming percentage, may be used as additional infant food. Still it is not absolutely necessary that every particle of ingesta should, in all instances, be digested and assimilated. That is impossible; the very breast-milk contains such amounts of fat that it cannot all be digested and absorbed. The requirement is only that not enough should remain undigested to encumber and irritate the intestinal tract.

The principles on which I base the theory of this treatment is simple enough. It has been published in my *Infant Diet*, and will again appear in the forthcoming volume on *Hygiene* alluded to above. Some of it has also been published by a former clinical assistant of mine, in a previous number of the *JOUR. OF OBST.*, years ago. It consists in diluting the boiled and skimmed milk with barley-water or oatmeal gruel. It must be boiled to check its tendency to become sour, to remove a portion, though small, of its casein and fat, and to expel the gas contained in the raw milk to the amount of three per cent.

Of the two, as may be known, I prefer barley for general use.

The prepared commercial barley is characterized by its fineness and whiteness. But these qualities are suspicious characteristics; the less the quantity of the yellowish outer layers of the barley, the less is it to be recommended. The prices of the grain, though low, vary in such a manner that adulteration by refining pays very well. I would, therefore, recommend that the barleycorn which is employed for infant diet should be ground as thoroughly as possible in a coffee-mill, both in order to diminish the period necessary for cooking it, and also in order to retain the gluten. *It is even preferable, for very young infants, to cook the barley whole for hours, thereby to burst the outer layers of cells, empty their contents, and then, by straining, to get rid of the larger part of the starch which is found toward the centre.* The next best method consists in crushing the whole grains of barley, and not to employ the so-called pearl barley, which is barley minus husk. At a more advanced period of life the latter preparation, with its greater

amount of starch, will suffice, however, because oatmeal, on account of its larger percentage of fat and mucin, is more liable to relax the bowels. In other respects the chemical composition of the two is so nearly alike that it would be immaterial whether we choose one or the other. But there is no danger to which little children are so liable as that which arises from their tendency to diarrhea. My advice, therefore, is to administer barley to children who manifest a tendency to diarrhea, and oat-meal to those having a tendency to constipation, and, whenever a change occurs in the intestinal functions, to give one or the other, according as constipation or diarrhea predominates.

I hold this mixture to be the *conditio sine qua non* of the thorough digestion of the milk. It, only, will insure the proper nourishment of the infant. With this food alone I have seen children endure the heat of summer without any attack of illness whatever. It is because I am so deeply convinced of its importance that I return to the subject here. In this climate, so perilous to infant health, where severe derangements of digestion belong to the most common of the daily experiences of the practitioner, I have had occasion again and again to be convinced of the reliability of my mixture. It has this advantage, too, that it necessitates no dependence upon the honesty or competence of the apothecary or manufacturer, but this mixture can be prepared by any one, however poorly situated. I conceived it to be necessary to discover a kind of food, suitable to the infantile age, which *could not be spoiled through ignorance and fraud, nor be liable to have its price enhanced by trade dealers*. All of these indications have been fully met in the preparation which I have described.

The object I desire to attain is to insure a slow action of the gastric juice, or of the excess of acid in the stomach upon the casein of the milk, and this object I attain under all circumstances. Should a slight diarrhea occur, or a little casein be vomited (a rare accident, to be sure), or casein occur in the stools, then all that is necessary is to diminish the proportion of milk. It may sometimes be necessary, though very seldom, to withdraw the milk entirely for a time, but only in cases of real illness. If the physician or attendants have properly apportioned the ingredients of the mixture, we may be rather sure that the child's digestion and assimilation will be regular

and normal. Infants that are partly nourished at the breast almost invariably thrive well with the addition of my mixture. Children, from their fourth or fifth month and upward, may often be fed with it exclusively, and not unfrequently nothing else is given from the day of the birth. I can positively affirm that in all these cases assimilation and increase in weight have proceeded quite normally. Altogether, the brief form in which I laid down the above principles, years ago, and in which they have been published several summers by the New York Health Board (See *Infant Diet*, 2d Ed., 1876, p. 118) for the benefit of the general public, rich and poor, has always been found satisfactory.

The addition of barley or oat-meal for the purpose of rendering milk digestible is not, however, absolutely indispensable, though I have learned to prefer them. For gum-arabic and gelatine are also very valuable ingredients, indeed, of infant foods.

As far as the former is concerned, Frerichs, Lehmann, and Husemann did not admit its undergoing any change in the human body. Gorup-Besanez believes in its solubility, but not in its digestibility; hence if, in his opinion, gum-arabic is an important aid in digestion, it is so for one reason only, namely, that it acts mechanically, and renders the coagulation of milk less dense. Of late, however, Uffelmann has made some experiments with a solution of gum-arabic of the strength of *eighteen* parts of the gum to *two hundred* of water. His experiments were made upon a boy upon whom gastrotomy had been performed, thus affording opportunity for making direct observations. When he introduced this solution into the boy's stomach, he found grape-sugar after some time, no saliva being present. The same transformation has been observed in the Munich laboratory.

Fifteen grammes of the above solution yielded *five* centigrammes of grape-sugar after forty-five minutes; *thirty* grammes gave *twenty-eight* centigrammes after *sixty* minutes. The liquid taken from the stomach in the latter case was very acid indeed. It matters not whether this acid was inside the stomach previously, or was developed during the presence of the gum-arabic solution; in both instances it appears that the development of muriatic acid and the transformation into grape-

sugar go hand in hand. It is possible, then, that it will be found practical, in those cases in which the object is not simply to mix milk with gum-arabic, but also to derive benefit from the digestion of the gum, to add a small quantity of muriatic acid.

Gelatine, in the opinion of many, when combined with milk, fulfils two indications. The one is the same as that obtained by the mechanical effect of gum-arabic and farinaceous articles; the other is found in its usefulness as a tissue-building material. Guérard quotes Jean de Lery, who speaks as follows: "Ayant expérimenté que cela (skins, parchemin) vaut au besoin, tant que j'aurais des collets de buffles, habits de chamois, et telles choses où il y a suc et humidité, si j'étois enrhumé dans une place pour une bonne cause, je ne me voudrois pas rendre pour crainte de la famine." Papin is reported to have made the offer to Charles II. of England to furnish for the use of poor-houses and hospitals "un quintal et demi de gelée" with "onze livres de charbon." This offer was refused because a dog was paraded before Charles wearing a sign-board containing said dog's request not to be deprived of his mess of bones.

The French Academy of Medicine has taken great pains to discover the properties of gelatine. After Magendie in 1848, Vrolik in 1844, Bérard in 1850, and Edwards and Balzac, had published their reports upon the subject, Guérard comes to the following conclusions: 1. That gelatine is very nutritious; 2. That very probably it is of great importance in the process of building up cellular tissue, therefore absolutely necessary for the preservation of life. Frerichs, Metzger and De Bary, Schroeder, Kuehne, and Etzinger, found that gastric juice changes gelatine in such a manner that it loses the property of gelatinizing. This effect was not produced when it was treated with muriatic acid only. On the other hand, Imthurn also attributes the effect to the influence of muriatic acid. It is true that Meissner and Kirchner have entirely denied the changeability of gelatine by means of gastric juice. But Gorup-Besanez is of the opinion that gelatine is peptonized in a manner similar to the albuminates. It seems that Uffelmann has also settled this question. He found, in the gastrotomized boy, *first*, that while he was feverish, and again without fever, the

gelatine was speedily dissolved in the gastric juice. It was so modified at the end of one hour that it would no longer coagulate, and was easily diffused. To produce this change by means of artificial gastric juice, he found, however, that from eighteen to twenty-four hours were necessary, and in both instances there was no offensive odor. When the experiment was performed within the stomach, he occasionally observed the presence of grape-sugar. When that occurred, the temperature of the body was elevated. No grape-sugar was ever found when the gelatine was exposed to the action of artificial gastric juice. Gelatine digested in gastric juice retains its essential chemical properties. It resembles peptone, inasmuch as it is not precipitated by acids. It differs from peptone, inasmuch as its diffusibility is less, and, when dissolved in acetic acid, it can be precipitated by ferrocyanide of potassium. It is so much like peptone that its digestibility can hardly be doubted, not to speak of the direct observations made by Uffelmann. There is one point, however, not to be lost sight of, viz., that it is apt to putrefy, and therefore requires the addition of a small quantity of muriatic acid. The latter point is of great practical importance; for, in acute diseases, in slow convalescence, in anemia, the secretion of pepsine and muriatic acid is very much limited. For that reason muriatic acid should be added whenever gelatine is administered.

When it is to be mixed with milk, in such cases, the plan as recommended by Dr. Rudisch, and specified above, will perhaps be found most useful.

Curative Treatment.—So far as nutriment is concerned, the amount of food should not be larger than we have reason to expect can be easily digested. At all events, either lengthen the intervals between the meals or reduce the quantity of food given at one time, or both. When diarrhea makes its appearance in infants who have been weaned, it is desirable to return them to the breast. Those who never had breast-milk may be given the breast if they can be induced to take it, but only rarely will this be found possible. Whenever a child at the breast is taken with diarrhea, the passages from the bowels should be studied as to their contents. If a certain amount of curd is found in them, the least that is to be done is to mix the breast-milk with barley-water. This may be done in such

a manner that, each time before nursing, one or two teaspoonfuls of barley-water is given the child, so that the farinaceous food and the breast-milk will mix in the stomach. Or, it may be found advisable to alternate breast-milk and barley-water. In bad cases, particularly when the milk is found to be white and heavy and contains a great deal of casein, it be will found necessary to deprive the child *altogether* of its usual food. In such cases, the child will do better on barley-water alone (this to be continued for one or two days), than to expose it to the injury which will certainly follow the continuation of the casein food.

When diarrhea occurs in children who have been fed alone upon cow's milk, unmixed or mixed, it is necessary to reduce the quantity of cow's milk in the mixture. As a rule, we have to remember that cow's milk alone is apt to produce diarrhea, and it should be considered as a maxim that, whenever diarrhea makes its appearance, the amount of cow's milk given to the child should be reduced. When a mere reduction of the quantity does not suffice, it is very much better to deprive the child of milk food altogether. Not infrequently the removal of milk from the bill of fare is the only thing which will restore the child to health. It is possible that a mixture, such as recommended by Dr. Rudisch, of which I have spoken before, will be found digestible, even in such cases. My experience, however, is not sufficient to decide that point. In many cases, as a dietetic measure, it will be found advisable to add one or two tablespoonfuls of lime-water to each bottle of food with which the child is supplied.

In those cases in which barley-water does not seem to suffice as a nutriment, or where it would be dangerous to allow children to lose strength, a mixture which I have used to great advantage is the following: Mix the white of one egg with four or six ounces of barley-water, and add a small quantity of table salt and sugar, just sufficient to make the mixture palatable. The child can take this either in large or small quantities, according to the cases.

In such cases in which the stomach is irritable and vomiting has occurred, it is now and then better to give a small quantity, even one or two teaspoonfuls, and repeat the dose every ten, fifteen, or twenty minutes, than to give larger quantities at longer intervals.

In those in which the strength of the child has suffered greatly, it is necessary to add brandy to the mixture in such quantity that the child will take from one drachm to one ounce (grammes 4.0 to 30.0), more or less, in the course of twenty-four hours.

In those extreme cases in which the intestinal catarrh is complicated with gastric catarrh, where the passages are numerous and copious, and vomiting constant, where both medicines and food are rejected, there is frequently but one way to save the patients, and that is to deprive them *absolutely* of everything in the form of either drink or food or medicine. It is true that such babies will suffer greatly from thirst for an hour or two, but it is a fact that, after two or three hours, these children will look better than before the abstemious treatment was commenced. Not infrequently four or five hours of total abstinence will suffice to quiet the stomach and diminish both the secretion and the peristaltic movement of the intestinal tract. In some cases *six* or *eight* hours of complete abstinence will be required; or such children may be starved for even *twelve* or *sixteen* hours, with final good results. The first meals afterwards must be quite small, and they will be retained, and, as a rule, such children will subsequently do well.

I need not say here that, in addition to the dietetics for the digestive organs, it is necessary to supply the patient with as much cool fresh air as possible. The worst out-door air, when cooler, is better than close in-door air. The undeveloped condition of the nerve-centre in the normal infant, the relaxation of the inhibitory nerves by heat, the absence of radiation from the surface, the lacking stimulus—during hot weather—of the cutaneous sensitive nerves, the diminished metamorphosis of tissue, the diminution of the powers of digestion, not only by shortening nutrition, but by directly lowering the secreting powers of digestive glands in the stomach and intestines, are just as many factors in the production of the very worst forms of infant diarrhea.¹ I have kept very bad, desperate cases out all night upon the bluffs over the East river. The windows must not be closed. If possible, the children should be sent immediately to the country and into the mountain air.

¹ Compare: "Infant Diet," second ed., 1876, pp. 101-116.

The second indication consists in the removal of undigested masses retained in the intestinal tract. Not only in cases in which the diarrhea has resulted from previous errors in diet of the child, but also in those cases dependent upon sudden changes of temperature and exposure, it is desirable to empty the intestinal tract of its ballast. For that purpose castor oil, calcined magnesia, or calomel may be used. So far as the latter is concerned, the discrepancy of opinion with regard to its efficiency will probably be found to depend upon the variation in the size of the doses recommended by different authors. When a purgative effect is desired it should not be given in small doses, and, according to age, from *two* to *six* (0.1–0.4) grains should be administered.

Third. Nothing should be given that contains salts in any sort of concentration. Thus, beef-tea should be avoided. It has come very largely into use in practice among children both in this country and in Great Britain. In Germany, too, it has found very many advocates, and among some who have abandoned the obsolete notion that when prepared in the customary way it contains a large proportion of protein in its composition. It must be remembered that this form of meat-extract contains a very large amount of salts, and that the direct effect of these upon the intestinal canal may be productive of very unpleasant consequences. It is a mistake to give it when the intestines are irritated or very susceptible of irritation, for the reason that diarrhea is apt to directly follow its use. Nevertheless, I have often seen beef-tea given under these very circumstances for no other object than the vain one of furnishing the child with a great amount of nourishing food. This is very commonly done during the obstinate and exhausting diarrhea of summer. If the people insist upon giving it, and there is no special contraindication to its use, in a given case, it should be administered only in connection with some well-cooked farinaceous vehicle, and the best of all for this purpose is barley-water; or it may be mixed with beaten white of egg, but no more chloride sodium should be added. For the main danger in beef-tea is the concentrated form in which its salts are given.

Fourth. Everything should be avoided that increases peristaltic motion. Thus, carbonic acid and ice internally.

Fifth. Avoid whatever threatens to increase the amount of acid in the stomach and intestinal tract. There is so much acid in the normal, and still more in the abnormal stomach and intestinal tract, that it is absolutely necessary to *neutralize* it. For that purpose any alkali, perhaps, will suffice, but it is safer to resort to preparations of calcium than of sodium or magnesium. Soda and magnesia, when introduced into the stomach and duodenum, will find a number of acids and form laxative salts. Frequently I use carbonate of lime; not infrequently phosphate of lime. Both of these will act as antacids, but the latter preparation is to be preferred in those cases in which free phosphoric acid is deemed of importance for the purpose of facilitating pancreatic digestion.

So far as lime-water is concerned, its administration, certainly, is correct chemically. But we should not place too much reliance upon this popular remedy. We should not forget that it contains about one part of lime to eight hundred of water, and that it is necessary to swallow at least *two* ounces of the fluid in order to obtain a single grain of lime.

A further indication is, *the necessity of destroying ferments*. For that purpose most metallic preparations will do fair service. One of these, that has been extensively used, is *calomel*, and now in *small doses* frequently repeated— $\frac{1}{10}$, $\frac{1}{4}$, or $\frac{1}{2}$ a grain (0.1–0.15–0.03), every *two* or *three* hours. As to its effect as an anti-fermentative, there can be no doubt. It is very uncertain, however, as to how it produces this effect. It is possible that it acts by a portion of the drug being changed very slowly to the bichloride of mercury, which is known to be a very powerful agent in the prevention of fermentation. It is certain that one portion, at least, of the mercury is used to bind sulphide of hydrogen, which often acts in a poisonous manner. Infants will bear calomel very well, perhaps for the reason that elimination is so much more rapid in them than in adults.

Nitrate of Silver, when given for the same purpose, should be largely diluted. From $\frac{1}{40}$ to $\frac{1}{16}$ of a grain (0.0015–0.004), dissolved in a teaspoonful or tablespoonful of water, may be given every *two* or *three* hours, and not infrequently with fair result. At all events, it does not answer to use a concentrated solution. Whenever it is concentrated, it acts more as

a caustic than as an astringent. This remark is especially important with regard to injections of nitrate of silver into the rectum, where it is apt to do as much harm as good. Even a mild solution—one or two grains to the ounce of water (1: 500 or 250)—when injected into the rectum is apt to give rise to tenesmus and soreness about the anus; whenever it is to be given in that way, the solution should be mild and largely diluted, or the anus and its neighborhood should be washed with salt water before the injection is administered.

Bismuth acts very favorably. Moderate cases of diarrhea will usually show its effect very soon. Doses of from $\frac{1}{2}$ to 2 or 3 grains (0.03--0.20), given every *two* or *three* hours, will act very favorably indeed. In those cases in which the diarrhea has lasted for a long time, and a large surface of the intestinal tract is certainly implicated, the doses of bismuth should be large in order to be certain of immediate contact of the drug with the sore surface.

A *final indication* is the depression of the hyperesthesia of the general system and of the intestinal tract in particular. The effect of opium is very probably an anatomical one, and brought about in such a manner that a combination takes place with the nerve plasma. As this is so much softer and succulent in the child than in the adult, the effect is so much stronger. There have been authors who condemned the use of opium altogether, which, certainly, is incorrect. The doses should be small, and they may be repeated frequently. Administered in this manner, opium can be used with perfect safety both internally and in an enema. For, when the doses are small, it is possible to stop before an overdose has been given. One of the rules for giving opium is this—the child should not be waked up for the purpose of taking the medicine. Opium does not always act as a depressant, but sometimes as an excitant. This difference in the effects produced by the drug are well known. Very small doses will act as an excitant, while relatively large ones will act as a depressant. The exciting doses, will, when accumulated, also show their constipating effect, and whenever there is fear of collapse, it is safer to give $\frac{1}{200}$ of a grain (0.0003) every half-hour or hour, than to administer $\frac{1}{50}$ of a grain (0.0012) every two hours.

Alcohol.—Small and frequent doses will certainly stimulate the nervous system, digestion, and circulation, and they

also stimulate the skin and increase perspiration. Alcohol, given in this manner, certainly arrests fermentation. Moreover, it takes the place of food, and will act favorably as food when no solid carbo-hydrates are tolerated by the intestinal tract. As it is absorbed in the stomach, so does it protect the intestinal tract. It has been found that, when only small quantities of milk and pure alcohol and water are given as food, the body increases in weight. But it is absolutely necessary that the alcohol or the alcoholic preparation should be pure. Fusel oil will dilate blood-vessels, produce and increase congestion, and prove dangerous. Where no good brandy or whiskey can be procured, it is better to use alcohol in substance diluted with water.

Finally, it is necessary to reduce the amount of secretion taking place from the surface of the intestinal tract. For that purpose astringents may be used, such as alum, lead, tannic acid, pernitrate of iron, and, what has already been spoken of, nitrate of silver. In all those cases in which the stomach participates in the process to any considerable extent, almost any astringent will prove ineffective. Neither alum nor lead nor tannic acid may do otherwise than irritate the stomach, and it will be necessary to depend altogether upon nitrate of silver, or better upon bismuth, for the purpose of meeting *two* indications. To fulfil several indications at the same time, it is often good practice to combine remedies.

The main indications are to neutralize acids, to reduce nervous irritability, to arrest secretion, and to change the condition of the surface of the catarrhal mucous membrane.

For that purpose, in the generality of cases, I combine bismuth, opium, and chalk according to the following formula.

R Bismuth subnit.	.....gr. i. (0.05)
Prepared chalk.....	grs. ij. (0.10-0.20)
Dover's powder.....	gr. $\frac{1}{3}$ (0.02)

This combination is suitable for a baby *ten or twelve* months of age, and the dose can be repeated every two hours. In all those cases in which acid is very abundant, it is necessary to increase the doses of antacids without necessarily giving large doses of opium.

Whenever it is necessary to stimulate, and alcohol alone does not meet the requirements, resort may be had to hot

bathing. This is especially serviceable in those cases in which the surface is cool and the temperature of the body, measured in the rectum, is pretty high. A hot bath in which the child may be kept for *two* or *three* minutes will restore some warmth to the surface, dilate blood-vessels, reduce temperature, and act as a nervous stimulant. To relieve intestinal pain, plain warm fomentations; to relieve heat, cold applications are sufficient.

Cumphor stimulates the heart, and reduces temperature, and may be used internally or subcutaneously according to the necessities in the case. For subcutaneous injections camphor may be dissolved in either oil or alcohol. The effect derived from camphor as a stimulant is not permanent, but still very much more permanent and steady than that produced by carbonate of ammonia.

The dose may be from $\frac{1}{4}$ to $\frac{1}{2}$ a grain (0.015–0.03) every hour or two, when only a moderate stimulation is required. In urgent cases it may be given in doses of from *five* to *ten* grains (0.3–0.6) in the course of an hour, and usually the effect will be favorable.

It is, however, only in cases in which real collapse is present that doses of five or ten grains will be required, and it may then be administered dissolved in alcohol, and with or without musk.

There is no remedy that will act more favorably in conditions of great debility and collapse—collapse with or without spasmodic symptoms—than *musk*. It is true it is scarce, very frequently spurious, is expensive, and must be given in larger doses than usually recommended. But in cases of collapse, doses of five or ten grains (0.3–0.6) should be given at once, and should be repeated every half-hour or hour. More than two or three such doses will not be required to yield a result.

The dysenteric miasma¹ being unknown, the rules commonly obeyed in the hygienic management of all miasmatic and infectious diseases are valid in an epidemic of dysentery as well. Streets, water-closets, and sewers must be disinfected effectively, dwellings and hospital wards vacated from time to time, and

¹ Compare the author's essay on Dysentery in Gerhardt, *Handb. d. Kinder-Krankheiten*, Vol. II., 1878.

individuals protected by frequent and careful ablution and the disinfection of clothing. Special care ought to be taken lest many dysenteric patients be admitted to children's or, in fact, all hospitals. Their number ought to be limited when they are admitted to special wards, and smaller than that of typhoid fever patients when received in general hospitals. Dysenteric evacuations are to be disinfected and removed, soiled bed-linen disinfected and washed.

Those in relative health are to give the greatest possible care to their digestive organs. Indigestible food must be avoided rigorously during an epidemic. Vegetables containing a large percentage of cellulose, salads, cabbages must be refused to children of even advanced age, and even ripe fruit ought to be refused as a rule. Even healthy children of three or five years will, now and then, without apparent cause, under normal circumstances pass soft peas or whortleberries, though well prepared, while there is no apparent change along the whole length of their alimentary canals. Animal milk, too, requires great care when given to younger children, nay, common cases of diarrhea require that the amount of milk given them should be rescinded. Cow's milk, when unmixed or mixed with water only, acts in part as an irritant during an epidemic or individual disposition to diarrhea. In regard to that, I have heretofore laid down the rules according to which cow's milk, unless there are positive indications for total abstinence, can be rendered digestible. More: great care ought to be taken lest the physiological constipation resulting from the unusual length of the colon descendens and the doubling and even trebling of the sigmoid flexure should act as a cause of disease. At all events, one or two enemata must be given daily. They are also, and even more so, required where habitual constipation depends upon rachitical debility of the muscular layers of the intestinal tract. When there is an actual indigestion from either alimentary or atmospheric causes, a purgative is required. I prefer a single effective dose to small refracted administrations, but no drastic to a child of one or two years. Five or ten grains (0.3-0.6) of calcined magnesia, three or six grains (0.2-0.4) of calomel, with an alkaline addition, one or two teaspoons of castor oil, half a teaspoonful or less of the fluid extract of *rhamnus frangula*, act both effectively

and agreeably. Pain and tenesmus may be prevented by the addition of codein, or extract of opium, both of which have less of the constipating effect of the gum, or by extract of hyoseyanus. I need not add that in times like these the usual care is to be taken of the general health. Woolen or cotton flannel undergarments ought to be changed every morning or night, so that they have ample time to get rid of the accumulated moisture. The stockings also ought to be of wool or thick cotton, must cover the entire leg and part of the thigh, and be changed frequently.

When the disease has made its actual appearance, the diet requires great attention. Altogether it would be wrong to force nourishment into a patient whose appetite is impaired and fever high in the very beginning of the disease. But there is hardly another disease in which consumption and emaciation are so rapid by both actual expulsion of substance and nervous exhaustion as in dysentery. Therefore, the little patients ought to be supplied soon with a certain amount of food. Barley-water with milk, or barley-water with milk and the whites of eggs, will suffice for a long time, and will prove digestible; if not, small doses of pepsin with muriatic acid, or lactopeptin, or bismuth, or pancreatin, or milk prepared according to the plan of Dr. Rudisch, will enhance their digestibility. In some cases, broiled or raw beef, in small quantities, but frequent doses, is well tolerated, provided that the stomach and small intestines have not participated in the actual morbid process from the commencement. This happens very often, indeed. In every feverish disease, and mainly such of the abdominal organs, saliva is reduced in quantity, and the stomach less liable to digest. Besides, a large tract of mucous membrane is sore or inflamed, and liable to be irritated by passing solids, meat fibre, casein, cellulose. Whenever the tongue is coated, the region of the stomach irritable, it is best to refuse even raw beef and milk, until the tongue begins to be more normal. Nay, even Leube's beef solution, one of the sheet-anchors during recovery, ought to be dispensed with, except in conditions of great urgency. Beef-tea is contraindicated. I emphasize that fact, as one of the first general advices in the practice of many of us is the administration of beef-tea, in regard to which, I refer to such remarks as I made before.

All nourishment ought to be tepid. Ice increases peristaltic motion and gives rise to pain and tenesmus. So do effervescent beverages, Selters, Appollinaris. In mild cases, particularly in the beginning, stimulants, either alcoholic or other, are not required. But I do not share the opinion of such as forbid them absolutely; on the contrary, they will prove both pleasant and effective during the periods of increasing debility and convalescence. In these conditions, from half an ounce to two ounces (15.0-60.0) of brandy or whiskey daily, in small and frequent doses, and largely diluted with mucilaginous or farinaceous fluid, are very salutary, not to speak of the cases of great debility and actual collapse. In such conditions, there is hardly a dose of alcoholic or other stimulants which, where temporarily required, ought to be considered too large. Ten grains of camphor and four ounces of brandy administered to a child of two years in such a condition, during a single hour, I know to have saved its life. It is better for children to take in the course of one day three or six ounces of brandy, ten or twelve grains of camphor, or twenty or thirty grains of musk, than it is for parents to bury them on the next.

The regulation of the surrounding temperature is of great importance, even in the mildest cases. What appears a mild case to-day may be a serious one to-morrow. The temperature of the room need not be above 70° F., but the little patient ought to be in bed and well covered. His linen must be warmed before being put on, changed frequently, the body often washed, particularly the anus; bed-pan and evacuations disinfected, windows opened. The feet have a constant tendency to get cool and ought to be warmed constantly. One tepid bath at least ought to be taken daily; for no other purpose the patient must leave his bed. Tepid fomentations will alleviate colic, warm injections tenesmus. Of these latter I shall have to say more.

In many mild or moderate cases, this dietetic treatment of an attack of dysentery may suffice, but its effect is not to be relied upon solely, for at any moment medicinal treatment may become urgently indicated. Personally, I almost feel like counting the administration of a mild purgative in the first commencement of a dysenteric attack among the dietetic indications. A copious evacuation from the bowels appears to

be an essential aid in procuring a mild course for the incipient morbid process. When, after all, a rapid recovery can no longer be expected, after these dietetic measures, the indications for treatment are plain. The local morbid process is to be inhibited, the peristalsis to be moderated, the irritability of the intestines to be reduced to a minimum, and the morbid products removed both as quickly and gently as possible.

As I said before, I like to begin the treatment with a purgative. Calcined magnesia (with or without some salicylate of soda, according to the condition of the stomach), castor oil with opium, the fluid extract of senna or rhamnus frangula, or from three to eight grains of calomel, to be followed by a dose of Dover's powder. I am well aware of the objections to mercury, and know of but few indications for its administration except in syphilis. Its protracted use, although it is not so apt to give rise to stomatitis as it is in adults, may still prove so deleterious in its effect upon the general system that this application has been greatly rescinded in the last twenty years of my practice. The objection alluded to is, however, more valid in regard to small and frequent doses than to single larger ones, and cannot contradict, therefore, the warm recommendations of calomel on the part of, particularly, English physicians. Still, purgatives are indicated in the *commencement only* of dysentery, not through its whole course, as has been advised in the dysentery of adults. In the latter, accumulations of feces of old date are not at all rare, in fact there are very few adults where they may not be met with. In children the intestines are smaller, the contents more liquid, relaxations and diverticles rare, and accumulations less frequent and less copious. Thus, though adults may require purgatives in the course of a dysenteric attack, children, as a rule, do not require such a repetition. But lately a young friend was, by the advice of a consulting physician, awed into giving a purgative in the third week of a dysentery doing well on bismuth and opium; to some disadvantage. Where, however, an indication appears to arise, the purgative ought to be castor oil or magnesia, no longer calomel or a drastic.

We know of many recommendations of emetics. Their effect was described as revulsive; their general and principally

their diaphoretic powers were praised. Still I think that a warm bath and warm beverages, while they are just as effective, are less violent. Ipecacuanha has been recommended more than any other remedy of that class, but not for its emetic effect. On the contrary, McLean, Woodhull, and others insist upon avoiding the nauseating effect. McLean administers a hot bath, and a dose of opium or chloroform. This is followed by a dose of twenty-five or forty grains of ipecac; he allows his patient to suck ice, but no drink for two or three hours, and uses sinapism or oil of turpentine as derivants. A smaller dose of ipecac is given after eight or ten hours. Sometimes another dose of eight or twelve grains is required on the following day. Recovery is said to set in soon. This ipecac treatment is reported to have resulted, amongst the military in England, where it was first introduced, as "*radix anti-dysenterica*," in better statistics than the former routine treatment with mercury and depletion. The latter I cannot recommend. Except the anus, no tangible locality has blood-vessels connected with those of the diseased mucous membrane. There is no indication for leeching the abdominal surface as long as there is no complication with peritonitis. Generally the consumption of blood is so large in dysentery that saving blood is more advisable than taking.

Great sensibility of the left hypogastric region and heat will be alleviated, however, by the application of ice. But it must not be forgotten that very young infants bear ice but a short time, whether applied to head or abdomen. I advise to watch the effect of the application either of the ice bladder or the ice-cold cloth. Now and then, even in adults, we meet with an idiosyncratic incompatibility with cold. It has to be taken into account. Sometimes warm applications of either water or poultices prove more efficient in regard to the two indications, which consist in alleviating irritation and reducing temperature. Sometimes a simple warm application, which may be changed every few hours, or a cold application which is permitted to get warm on the skin, will result in reducing both pain and temperature, as both physiological laws and therapeutical experience may lead us to expect.

Opium (and its alkaloids, morphia and codeia) is invaluable in dysentery, notwithstanding the contrary opinion of a num-

ber of authors. The objection to its use is decidedly exaggerated. Such accidents as have been reported in the journals to result from its administration must be attributed to the fact that either the dose was absolutely or relatively too large compared with the idiosyncrasy of the little patient. Dysentery both requires and tolerates larger doses of opium than an average diarrhea. In this respect this disease stands abreast with peritonitis. The main indications are to relieve pain, reduce peristalsis, and diminish the copious serous secretion; no other remedy fulfils all of them so well. For this purpose it ought to be given internally; for enemata containing opium may act favorably, but the more intense the tenesmus the less reliance can be placed on its effect, and the amount of the opiate thus brought into real action cannot be estimated. From amongst the opiates I prefer a tincture, or the wine, or opium in substance, or Dover's powder; but rarely have I injected morphia under the skin. The effect of the drug is easily watched and controlled, by commencing with moderate doses, not repeating them too often, and being guided by the effect obtained. If opium is to be replaced, opium with hyoscyamus, or with belladonna, or hyoscyamus or belladonna alone, may take its place temporarily.

After the purgative administered in the first stage of the disease has proved efficient, astringents ought to be resorted to at once. They may either be given in combination with opium or separately. They are expected to pass wholly or partly through the entire length of the intestinal canal, thus coming in contact with the inflamed and ulcerous mucous membrane. Amongst those eligible are tannin, gallic acid, and vegetables containing the same (ratanhia, cinchona, catechu), besides subacetate of lead, nitrate of silver, and pernitrate of iron.

The daily doses of tannin range from eight to fifteen grains, (0.5 to 1.0) with opium or Dover's powder, lead in doses somewhat smaller, nitrate of silver one-sixth of a grain to one grain (0.01 to 0.06) in plenty of water, liquor pernitratiss ferri fifteen to fifty minims, in a mucilaginous or farinaceous vehicle. The single doses ought to be but small, but their administration frequent. There is another remedy which, in my estimation, stands very high, viz., the subnitrate or sub-

carbonate of bismuth. Not only does it cover and protect the mucous membrane, but it also has a decided anti-fermentative effect. Thus it is surely indicated in irritated conditions of the mucous membrane; it seldom fails when given in sufficient doses. There is no harm in sometimes giving it in such doses that part of the introduced material will pass through the entire length of the intestinal tract without undergoing decomposition. As its taste is not disagreeable, it may be given together with tannin and opium; the daily dose ought not to be less than one drachm or a drachm and a half (4.0 to 6.0). At the same time the passages ought to be examined as to their reaction. Abundant acid, so frequently found in the slightest intestinal anomalies, requires the additional administration of alkalies. In most cases carbonate of lime is preferable to either magnesia or the carbonate or bicarbonate of soda, the salts of both of which are apt to increase diarrhea. Sometimes, particularly when the stomach can be relied upon, the salicylate of soda may be added to the internal treatment. Besides the favorable effect of the soda in the intestinal tract, the salicylic acid may prove beneficial both by its anti-febrile and disinfectant action. In regard to the use of lime-water, I refer to some previous statements.

At the same time accidental complications may yield their own indications. McLean reports many cases of complications with malaria, necessitating the use of quinia; others cite scurvy requiring antiscorbutic treatment.

When the catarrhal or inflammatory form of dysentery be complicated with diphtheritic deposits or degenerations, either superficial or deep-seated, or when large portions of mucous membrane be expelled and ulcerations be developed, the indications for energetic treatment become more and more urgent. Local treatment is required to astringe, to disinfect, to produce new granulations. For that purpose astringents, carbolic and salicylic acid may be resorted to. To what extent local treatment can be useful, G. Thomas has proved but lately in a very tedious and protracted case. A lady suffering from chronic dysentery through many years, and reduced to the lowest possible degree, recovered within a short time under the repeated applications of a small amount of concentrated

nitric acid made to the surface of the ulcerated rectum through a speculum.

The local treatment requires the use of enemata. Their indications vary. They are to evacuate the bowels, or to reduce the irritability of the diseased intestine, or to accomplish an actual cure. These indications cannot always be fulfilled separately; sometimes two, sometimes all three can be fulfilled at the same time. The nature and quantity and the temperature of the liquid to be injected depend in part on the end aimed at, in part on the irritability of the individual intestine. Sometimes the bowel objects to the introduction of small amounts; sometimes, however, large quantities are tolerated very easily indeed. To introduce small amounts, the selection of the syringe is a matter of indifference. To inject large quantities, however, undue pressure and local irritation must be avoided. Thus the fountain syringe alone will answer; it ought to hang but a trifle above the level of the anus, say from six to twenty inches. The temperature of the liquid is not always a matter of great importance. Some recommend the injections to be ice-cold, some, however, tepid; both are frequently recommended as panaceas. But the practitioner will soon ascertain that some bear and require the one, some the other, some indeed very hot ones.

In my experience, for the large majority of patients tepid injections answered best. Not seldom is the intestine in such a condition of irritation that even small quantities of a very cold fluid are expelled at once. And again, there are cases in which enormous amounts of either cold or warm water are readily received. To accomplish the purpose of evacuating the bowel, plain water will often suffice, but one-per-cent solutions of salt in water will usually prove more acceptable. Additions of bitartrate of potassa, or castor oil, have proved so uncomfortable in my hands that I have discarded them long ago. However, when the secretion of mucus on the rectal mucous membrane was very large, one or two-per-cent solutions of bicarbonate of soda answered very well indeed. For the purpose of clearing the intestines, either of feces or the morbid products, a single enema is insufficient. It ought to be repeated several times daily. When much mucus is secreted and tenesmus intense, it may be applied after every

evacuation. In many cases the substitution of flaxseed tea or mucilage of gum acacia will prove advantageous. I had to continue them for weeks for both their evacuating and alleviating effect. When, however, the latter effect alone is aimed at, small quantities will usually suffice. An ounce or two of thin mucilage, or starch-water, or flaxseed tea, with tincture of opium, or better, extract of opium, prove very comforting. Glycerine in water has been recommended for the same purpose. The former alone, or but slightly diluted, irritates, nay cauterizes. It will require close judgment and individual experience to ascertain the degree of dilution.

When a local curative effect is aimed at, injections of small quantities will be found deficient. As the local lesions are often extensive, the amount to be injected must be pretty large. Almost always astringents are required. Sulphate of zinc, of alumina, subacetate of lead, nitrate of silver, tannin, chlorate of potassa, ergotin, salicylic and carbolic acids, and creasote have been recommended. Of the more common astringents I prefer alumina or tannin in one-per-cent solutions. Creasote answered well in solutions of one-half of a per cent. Salicylic acid resulted more frequently in pain than in benefit. Carbolic acid in solutions of one-half of a per cent has proved very beneficial, but I have learned long ago to be very careful in regard to its administration when I observed a case of poisoning with that substance. A young man suffering from chronic dysentery was to be treated with injections of carbolic acid in a one-per-cent solution. As it was expected that but a limited quantity would be tolerated before expulsion, no amount was specified. The intestine, however, being in a paralytic condition, received enormous quantities, until finally ten drachms (40.0) of crystallized carbolic acid disappeared in his bowels. That want of caution came near destroying the patient.

Injections of nitrate of silver may prove very useful in cases not quite acute. Before the solutions of a quarter of a per cent, or one, or two per cent are injected, the intestine ought to be washed out with warm water without salt. After the injection has been made, it ought to be neutralized with a solution of chloride of sodium; it is still better to wash the anus and the portion of the rectum within easy reach with

that solution before the medicinal injection be made. For even the mildest solutions are liable to give rise to intense tenesmus, when no such care has been taken.

In chronic cases, where the ulcerations are but few, or in the lower portion of the bowels only, small quantities suffice. But more acute cases and extensive lesions require large injections, the patient being on his side, or in the knee-elbow position. In a number of cases, both mild and severe, where neither the usual astringents nor nitrate of silver appeared to answer, I have been very successful when resorting to injections of subnitrate of bismuth. The drug is mixed with six or ten times its amount of water; of this mixture from one to three ounces (30.0–100.0) are injected into the bowel which has been washed out previously, twice or three times daily. The success was satisfactory, though a large portion of the injected mixture was soon expelled.

Suppositories containing the above substances may prove beneficial. But in order not to irritate they must be so soft as to melt readily. They may always contain some opium. But its admixture is not always sufficient to relieve the irritability of the rectum. For to accomplish this end, opium must at least begin to liquefy and to be absorbed, and absorption cannot be relied upon except where a part, at least, of the mucous surface is in a tolerable state of integrity.

INDENTATIONS OF THE FETAL CRANIAL BONES DURING PARTURITION;
THEIR ETIOLOGY, PREVENTION, AND SIGNIFICANCE.¹

BY
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On the night of the 23d of May, 1878, I was called to assist my friend, Dr. C., in a case of difficult labor. The patient, a sextipara, had been in vigorous labor for twenty-four hours; for the last twelve hours, the second stage had been at hand, and during this latter period, despite the administration of liberal doses of ergot, no progress had been made.

¹ Read before the Cincinnati Obstetrical Society.

The child presented by its vertex, in right occipito-transverse position, with slight forward deviation of occiput and marked Naegele's obliquity—the sagittal suture far back in the excavation, but a limited portion of the posterior right parietal region accessible to palpation, the anterior full in the excavation—large tumefaction in the region of the left parietal eminence; head fixed in the inlet; promontory not to be reached; abdominal walls relaxed and pendulous; uterine strongly anteverted and in a state of tonic rigidity, scarcely any change in consistence being perceptible during pains. The fetal heart-sounds still audible, but very feeble and irregular. Mother complains of "complete exhaustion;" is feverish, restless, pulse accelerated.

Manifestly, the indications for speedy delivery were not only plain, but urgent, and the means to be employed in fulfilling them, quite obvious: Forceps tentatively; if unsuccessful, craniotomy. The cranial forceps accordingly were at once applied and made to occupy very nearly the sides of the pelvis. No particular difficulty was experienced, either in the application of the instrument, or the subsequent extraction. The child was born in a state of partial asphyxia, but was soon resuscitated. The third stage of labor was normal. On digital measurement of the conjugata vera, this diameter was found to have a length of about $3\frac{3}{4}$ inches. Examination of the child disclosed the following peculiarities, viz., large caput succedaneum, already mentioned, upon left tuber parietale; linear mark below right limb of lambdoid suture, extending forward beneath corresponding ear and inferior maxilla—pressure mark from concave border of right blade of forceps—a similar mark, but much shorter, over left frontal eminence—pressure mark of convex border of left blade—further an indentation of bone at the upper border of the right temporal region, involving portions of both the parietal and frontal bones, but somewhat more of the former; depressed surface is very nearly upon same level throughout its extent and measures about $1\frac{1}{2}$ inches vertically by $\frac{3}{4}$ of an inch antero-posteriorly, its borders are abrupt, but smooth and not angular. Child in other respects in normal condition, cries vigorously; in short, appears to suffer no inconvenience from the cranial injury. Saw child again on the second day after its birth: bone depression not quite so deep; no disturbance of any of bodily functions apparent. Eight days thereafter, had another opportunity to examine child; dent remains unchanged, but infant is ill, has had diarrhea for last two days; mucous membrane of oral cavity is covered with a white curdy deposit—thrush. Was informed that Dr. C. had been called and had prescribed: learned subsequently that infant remained under Dr. C.'s care until near the end of the second week's illness, at which time, no improvement having taken place, another physician was sent for, who continued in attendance up to the child's death, June 18th, twenty-six days after its birth; diarrhea and debility being returned as the cause of death. The mother made a rapid and excellent recovery from her childbed.

Obviously, whatever of interest attaches to this case pertains to the child, its cranial injury, and early death.

Quite in accord with the rule to hold the physician responsible for all mishaps arising from the act of parturition, the parents and friends ascribed the cranial injury of the child to the use of the forceps, and its subsequent illness and death, to the cranial injury. The consequence in all such cases is, the accoucheur is blamed without stint, and may be thankful if he escapes being sued for malpractice.

These practical features, as well as certain scientific bearings in the case, have impelled the writer to examine the subject of cranial bone depressions of the fetus, with a view to the elucidation of the following queries, viz.,

1. How are indentations of the cranial bones of the fetus produced?

2. Can indentations of the cranial bones of the fetus be uniformly obviated by the skilful accoucheur?

3. What is the effect of indentations of the cranial bones on the well-being of the respective infant?

We will consider these questions seriatim and in the order propounded; hence,

1. *How are indentations of the cranial bones of the fetus produced?*

There is an abundance of evidence on record, both in obstetrical works and in the current literature upon this topic, showing that the injuries in question arise in a threefold, perhaps fourfold, manner, viz., *a.* from *direct* pressure of the forceps; *b.* from *indirect* pressure of this instrument in impelling the head against bony prominences of the pelvis; *c.* from impact of the head against said bony protuberances in the process of manual extraction of an after-coming head, or in the course of spontaneous labor. And, it is claimed quite recently that a fourth mode of production of these injuries has been discovered, viz., an ante-labor indentation of the fetal cranium.

In the majority of forceps deliveries, the operation takes place from below the superior strait: the fetal head here is usually embraced over the poles of its transverse diameters and *direct* pressure indentation of the cranium, under these circumstances, is all but impossible; when, however, it is seized in one of its diagonal diameters, as will be the case when the

instrument is applied in relation to the lateral walls of the pelvis upon a non-rotated head, then such indentations—of one or other of the frontal eminences—are liable to occur, if much force is required in extraction. With the head at the superior strait, where the blades of the instrument must needs take position at the sides of the pelvis and hence grasp the head either in its antero-posterior, or, what more frequently happens, in one of its diagonal diameters (Leishman¹) the danger to *direct* crushing of the skull-bones exists to a greater degree than in forceps deliveries below the level; the localities especially exposed to this danger being the frontal eminences, and to a certain extent also the occipital region. In forceps operations upon the after-coming head, similar dangers are in store, and they are especially to be feared when the forceps is brought to bear upon the head in face presentation. But, with all these dangers, direct forceps indentations of cranial bones do not make up the majority of these lesions. Cazeaux² speaks of them as among the “possible” occurrences in forceps operations; Hodge³ maintains that the fears usually entertained on this point are not well founded; Spiegelberg,⁴ Fritsch,⁵ and Kilian,⁶ regard the occurrence of fracture and depression of cranial bones from *direct* pressure of the instrument as rare, but “prone to occur, where great force is necessary to accomplish delivery.” It cannot reasonably be objected that the conclusions reached, viz., that *direct* forceps indentations of the fetal cranium constitute but a small minority of these lesions, may be the result of inaccurate diagnosis; the names cited are sufficient guaranty on this point. Besides, the diagnosis of *direct* indentations is not difficult, the linear marks upon the soft parts, after forceps extractions, being usually sufficiently plain to demonstrate the exact location of the blades upon the head; now if the “dent” is located within the confines of these areas, it is presumably the result of *direct* forceps pressure; if without, some other mode of produc-

¹ Leishman: System of Midwifery, second Am. ed., p. 495.

² Cazeaux: Midwifery, fifth Am. ed., p. 994.

³ Hodge: Obstetrics, p. 260.

⁴ Spiegelberg: Geburtshülfe, p. 821.

⁵ Fritsch: Klinik der geburtshülflichen Operat., p. 86 et seq.

⁶ Kilian: Operat. Geburtshülfe, p. 519.

tion must be held responsible. In the case herein reported, the bone depression was located, it will be remembered, outside of the marks of the blades, hence could not well have been the result of "direct" pressure.

If now, in any case of forceps delivery, the evidence unmistakably indicates that the bone-indentation is not the result of *direct* pressure of the forceps, the injury obviously can only have arisen from impact of the head against some of the bony prominences of the pelvic canal, and it then remains to determine what share, if any, the forceps had in the production of the injury. The conditions in the presence of which this class of lesions usually occurs are: a contracted—usually flat—pelvis; disproportion between certain diameters of superior strait and certain others of fetal head, and consequent arrest of latter at the inlet, in—approximately—transverse position. The blades of the forceps, applied under these circumstances, must take position, as above remarked, at the sides of the pelvis, and grasp the head over forehead and occiput, but as a rule do not maintain this hold; on the contrary, under the influence of pressure and traction, rotation of the head in the instrument takes place, until one of the diagonal diameters falls into the embrace of the clamps (Litzmann¹). But, whether rotation occur or not, the head is compressed in the direction of the transverse diameters of the pelvis, and thereby rendered not only less elastic, but, above all, enlarged in the direction of the conjugata; an already existing disproportion between this diameter and the transverse measurements of the fetal head is thus necessarily aggravated; the head can now only pass the contracted sacro-pubic diameter by indentation of its walls, moulding being impossible. The injury of the fetal head, under such conditions, obviously, is largely due to the *indirect* pressure of the forceps. On this point authorities are quite unanimous; Hodge,² Barnes,³ Litzmann,⁴ Fritsch,⁵ Kehrer,⁶ all having encountered cases of this character, are advocates of this view.

¹ Litzmann: Sammlung klin. Vorträge, No. 23, p. 194.

² Hodge: Obstetrics, p. 402.

³ Litzmann, l. c.

⁴ Barnes: Obst. Transactions, Vol. 7, p. 171.

⁵ Fritsch: Geburtshülff. Op., p. 304.

⁶ Kehrer, l. c., p. 143.

The argument that the forceps should not thus compress the head, and that an instrument with a large head-curvature will not so compress it, is fallacious, as there can be no traction without a corresponding degree of compression.

If the "ominous" rotation (as Litzmann expressed it) above referred to takes place, the posterior frontal boss is driven with great force against the promontory and indented by that protuberance; if no rotation occurs, or this is merely partial, the temporal region descends in front of the promontory and the depression is located between the frontal and parietal eminences, usually upon the parietal side of the coronary suture (Litzmann¹) or upon both sides of this suture, as in the case here reported.

That, however, the forceps is not invariably the cause, either *directly* or *indirectly*, of these cranial lesions, is conclusively demonstrated by the occurrence of such injuries in non-instrumental cases, *i. e.*, in manual extraction of the after-coming head, and in spontaneous labors. Upon the after-coming head the injury again is, generally, produced by the promontory, as the head is being rapidly drawn through a contracted conjugata, and, as a rule, is located near the anterior border of the posterior parietal bone; exceptionally the anterior parietal bone or one of the frontal eminences is indented by one or other of the horizontal rami of the pubis.

The lesion in question, occurring in the course of spontaneous labors, is likewise, almost invariably, produced by the promontory of a "flat" pelvis, and, inasmuch as the fetal head, in the usual transverse position (usual in flat pelvises), descends into the excavation by a movement of partial extension, is located about midway between tuberosity and anterior border of posterior parietal bone.

This theory of the occurrence of cranial bone indentations in spontaneous labors does not, however, seem to have found universal acceptance, it being alleged that a vis-à-tergo force adequate to accomplish this feat would inevitably prove fatal to the integrity of both uterus and vagina. Such cases, nevertheless, have been placed on record in goodly numbers and by prominent accoucheurs; Mad. Lachapelle² witnessed "depres-

¹ Litzmann, l. c., p. 195.

² From Goodell, Transactions of International Med. Cong., p. 781 et seq.

sions of bone upon the frontal region, after natural labor in distorted pelves ;" Siebold¹ observed "lesions and furrows" in the same region, "after spontaneous labors in flat pelves ;" Schoeller,¹ of Berlin, and J. W. Schmidt,¹ of Erlangen, have both reported instances of this kind ; Danyau¹ and Budin¹ likewise have encountered such cases ; Mlle. Puéjac² records an instance where, after a natural labor "the anterior angle of the left parietal bone was found depressed sufficiently to admit the half of an ordinary hen's egg." According to Schroeder,³ "the spoon-shaped depressions upon the parietal bones arise, not so very rarely, from the force of the pains alone ;" both Barnes⁴ and Fritsch⁵ have described and illustrated cases of this character. One-half of the cases of cranial depressions observed by Litzmann⁶ were the result of spontaneous labors. Respecting the supposed enormous force requisite to the production of these injuries, the experiments of Kehrer⁷ upon fetal cadavers have shown that this is quite within the range normally exerted (according to Duncan and Schatz) by the natural expelling forces of the parturient female. Kehrer found, what a priori might have been expected, that the degree of force necessary to indent the cranial bones of the fetus varied considerably with different localities of the skull ; that a greater force was requisite to indent a frontal boss than a parietal eminence, or to depress the central tuber of any bone than its spongy periphery ; that this force also varied considerably in different crania, according to firmness or elasticity of the bones. To depress the frontal boss, for example, by a circular surface of 15 lines diameter, a force equal to from 30 to 100 pounds was requisite, while to depress the parietal eminences, under like conditions, from 20 to 60 pounds only was necessary. The natural expelling forces, according to the authorities above named, normally exert a power, it will be remembered, equal to from 17 to 55 pounds' weight, but which may mount up to

¹ From Goodell, Transactions of International Med. Cong., p. 781 et seq.

² Gazette Obstetricale, Jan. 20th, 1876, p. 179.

³ Schroeder : Geburtshülfe, 5te Aufl., p. 554.

⁴ Obst. Transact., Vol. 7, p. 171.

⁵ Klinik der geburtshülflichen Operat., 2te Aufl., p. 302 et seq.

⁶ Litzmann. Sammlung klin. Vorträge, No. 23, p. 194.

⁷ Kehrer : Ueber Schädelimpressionen der Neugeborenen, 14. Jahresbericht der Oberhessischen Gesellschaft für Natur- u. Heilkunde, p. 149 et seq.

an intensity equal to 80 and even 100 pounds—a degree of force, hence, fully competent to indent the skull-bones of the fetus when the head is being driven against a sharp sacral promontory, and this, too, without destruction of the expelling apparatus.

Even if forceps have been employed in a given case of cranial indentation, it does not necessarily follow that the instrument, either directly or indirectly, has been the cause of the injury; this may have occurred spontaneously, before the instrument was brought into use; manifestly it will generally be impossible to determine, under such circumstances, how much of the mischief is to be set to the account of the forceps operation; if, however, the head was still at the brim when the instrument was applied, and a good deal of force was required in extraction, the forceps is probably responsible for the injury; on the other hand, if the head with its greatest circumference is already in the excavation and but little force is necessary to deliver, the operator may justly contend, particularly if the operation has been preceded by vigorous labor of several hours' duration, that the cranial depression had been an accomplished fact, before instrumental aid was rendered. In the case recorded in this paper, the cranial depression, located beyond the pressure-marks of the blades of the forceps, was certainly not the result of *direct* pressure, and as the extraction was easy, the presumption that instrumental compression had but little, if any, *indirect* share in the production of the injury is, to say the least, not without justification. The question will perhaps be asked, why was the fetal head in this case arrested at the superior strait and why the bone depression (instrumental, or spontaneous), seeing that five children had been previously born spontaneously and, so far as known, without a blemish? To this query I would reply that, in this sixth labor, the arrest of the head was doubtless largely due to the excessive obliquity of the uterus and presenting part, and to a less degree only to the moderate contraction of the sacro-pubic diameter; the presenting body, the head, being thus driven at a large angle against the promontory with the result described. It is a long-established and well-known fact that, in cases of moderate pelvic contraction, the earlier labors will often take place spontaneously, while later confinements are impossible

without assistance, mainly because of the greater laxity of the uterus and abdominal walls, and the consequent increased tendency to obliquities and displacements, in the latter than in the former class of labors. Not only are later labors under these circumstances much more difficult, they are likewise far more dangerous to the child.

According to Schroeder,¹ the mortality among infants of first three labors in moderately contracted pelves is only about 33 per cent, while in the second series of three, *i. e.*, 4th, 5th, and 6th labors, it amounts to fully 82 per cent.

Of the supposed ante-partum indentations of the fetal cranium but three cases have come to the knowledge of the writer, namely, those reported by Professor Ritter of Prague.² No theory is offered by Dr. Ritter relative to the exact mode of production of this class of indentations; whether they are thought to be produced by indirect external violence, or developed gradually in consequence of compression of the head against the brim (?). We can conceive how in either of these modes the lesion in question might be produced. That the dents were, at any rate, developed prior to the advent of labor, Ritter advances in evidence the facts that they were uncomplicated with fracture, that the borders and centres thereof were free from angularities, that little or no reaction was present, that the scalp was at all times freely movable, that no instruments were used—two children of the three being born in foot presentation (one artificial and one natural), and one in vertex presentation.—It is needless to say that all these peculiarities have been observed in cases of supposed labor indentations, and the question now arises, were the indentations of this description, hitherto observed, really all labor products, or were they or most of them, of ante-partum origin, and have accoucheurs all along been mistaken on this point? While the possibility of the development of such lesions during pregnancy is to be conceded, we must contend that the probabilities are altogether in favor of the older view, *viz.*, that these bone depressions are produced *during* and not *before* the labor. Further observations manifestly are necessary before a satisfactory and final decision can be rendered upon this point.

¹ Geburtshülfe, 5. Aufl., p. 556.

² Schmidt's Jahrbücher, vol. 174, p. 265, and vol. 175, p. 167.

Having thus shown how indentations of the fetal cranium are produced, we inquire,

2d. *Can they be uniformly obviated by the skilful accoucheur?*

In its more extended sense, this question may be unreservedly answered with "*No.*" The obstetrician, however skilful he may be, cannot accomplish physical impossibilities; if the fetal head in certain of its diameters is larger than those of the pelvic space which it is to traverse, a reduction in these excessive dimensions of the head must take place—the pelvic capacity being fixed—before its passage can be effected. This reduction is accomplished in one of two ways: viz., either by *moulding* or by *indentation*; the latter mode of eliminating an existing disproportion being probably operative much more frequently than is generally supposed, many an indentation produced upon the head as it passes the promontory is doubtless obliterated again before the child is born; experiments on crania of fetal cadavers and upon kittens having shown that *permanent* indentations of elastic skullbones are by no means so readily established, in fact are established only with considerable difficulty. If we now consider the preventability of the individual varieties of cranial depressions hitherto noticed, it is obvious that they are not all equally avoidable; those arising in the course of spontaneous labors can exceptionally only be obviated, as for example, when the injury arises in consequence of anomalies in presentation or attitude; but whenever the fetal head already presents in the most favorable manner, and still the injury occurs, it is manifestly unavoidable; likewise, if the rectification of anomalous situations of the head cannot be executed without serious risk to the mother. The same may be said of the cranial injuries originating during extraction of an after-coming head; in these instances no time can be granted for moulding, the head must yield at once, even at the risk of possible indentation of the cranium, else the child is lost; therefore, the bone depression, if it occurs, is unavoidable. In regard to the group of cranial depressions, resulting from indirect forceps compression, it is somewhat different; these injuries, as previously stated, occur almost invariably in forceps operations at the superior strait in contracted—flat—pelves, where the head, occupying a trans-

verse position, is subjected to lateral compression. This compression, though always prejudicial, is necessary to *the extent of maintaining the hold*, and if indentation results in consequence, it is clearly unavoidable, but must be regarded as preventable whenever the lateral compression of the head is in excess of this needful intensity; depressions of the fetal cranium, the result of too hasty extraction—the moulding process being thus rendered inoperative—also, are doubtless at times preventable by an opposite course of treatment, when such course is not contraindicated by reason of impending dangers. Those cranial indentations, on the other hand, arising from impact of the head against the promontory consequent upon rotation, after seizure with the forceps, can rarely be avoided; skilful operators like Litzmann,¹ though perceiving the danger, having found themselves powerless to obviate it. The *direct* pressure indentations finally are preventable in all instances except those requiring great tractile force to effect delivery. Whenever powerful traction is necessary, these injuries will occur—Hodge²—are, however, much more liable to take place if the head is grasped otherwise than over its transverse diameters and when so embraced as a matter of choice, and the injury in question is inflicted, it should not be regarded as absolutely unavoidable, but as possibly preventable by a different mode of adjustment of the instrument.

It now remains to notice question 3d. *What is the effect of these injuries on the well-being of the child?*

Necessarily the effect of indentations of the cranial bones of the fetus must be quite variable—must vary, *cæteris paribus*, with extent and depth, with location and with special characteristics of the injury; again, certain of the effects are manifest immediately, or soon after the birth of the child, while others are developed only gradually in the course of months, or years. Being thus variable, it seems proper to consider the question in relation to the several bearings indicated and especially to make separate note of the “*immediate*” and the “*remote*” effects of cranial depressions.

In so far as the *immediate* effects of these injuries are concerned, it is well known that slight depressions, or indentations,

¹ Litzmann: *Sammlung klin. Vort.*, No. 23, p. 194.

² Hodge: *Obstet.*, p. 260.

devoid of complications, are borne without perceptible inconvenience, the respective infants thriving as if nothing had happened. Inferior animals, also, as shown by the experiments of Kehrer,¹ appear to suffer but little and only momentary inconvenience from such injuries. Deep and large indentations, on the contrary, being usually accompanied by fracture of the depressed bone, together with laceration of meninges and brain substance, are almost invariably fatal; death taking place either during the labor or within the first twenty-four or forty-eight hours thereafter (Fritsch²). Even slight depressions complicated with intracranial lacerations are usually destructive of life, and if the laceration should happen to involve some one of the venous sinuses, a lethal termination is certain to follow. Again an injury located near the base of the skull is much more liable to cause death, by reason of the vital importance of the basal ganglia of the brain, than when some portion of the summit of the cranium is the seat of the lesion. Those bone indentations finally which are supposed to arise during gestation, will manifestly afford a far better prognosis than those springing from the eventualities of labor. Collectively considered, the injuries in question must be regarded as very grave accidents, being frequently and speedily followed by death. Out of a total of 65 cases of spoon-shaped depressions, collected by Schroeder,³ 32 proved fatal and 33 survived; of the fatal cases, 22 were born dead and 10 died shortly after birth; of the surviving, but few manifested any kind of inconvenience during the period they were under observation. Fritsch⁴ regards these lesions as generally fatal, more especially those complicated with fracture; "the children may cry lustily," he says, "immediately after birth, but within a few hours thereafter, they grow drowsy and die in profound stupor," the autopsy revealing extensive extravasation of blood upon the hemispheres. Of Litzmann's⁵ cases of cranial depression, those born at maturity and spontaneously, survived, while the premature children uniformly perished. Osiander regarded cranial depressions as

¹ Kehrer, l. c., p. 184 et seq.

² Geburtshülffliche Operat., 2d Aufl., p. 305.

³ Schroeder, l. c., p. 554.

⁴ Fritsch, l. c.

⁵ Litzmann, l. c., p. 194.

quite harmless—a conclusion which, as Litzmann very pertinently suggests, does not altogether harmonize with the large collection of indented fetal skulls in his—Osiander's—cabinet. Ritter's three cases of supposed ante-partum indentation all survived. The case recorded at the head of this paper likewise survived the immediate effects of the lesion, the child being, as stated, in apparently good health for the space of a week. There is scarcely room for doubt but that the death of infants thus injured at birth is at times erroneously ascribed to the bone depression, when in reality it was due to a severe and protracted labor, quite independent of the cranial lesion.

In regard to the remote consequences of cranial bone depressions, it seems necessary to a proper understanding of the subject to call to mind the changes which occur in the cranial cavity consequent upon indentation of its walls; these are: increased tension in both cranial and spinal cavities, depression of brain substance, escape of part of the liquid contents through the natural openings—Kehrer¹—and not infrequently some extravasation of blood upon the surface of the brain. Thus changed in its relations and deprived of a portion of its legitimate nutritive fluids, it is natural to suppose that the respective brain would suffer in its development and functional vigor. That such is really the case has, it would seem, been fully verified by actual observation; the testimony of both Michaelis² and Kehrer³ being to the effect that various mental defects are the legitimate result of permanent and uncompensated cranial depressions. Fritsch⁴ relates the case of a boy with a permanent cranial indentation, who, at the age of eight years, was quite idiotic, and for which mental anomaly no plausible cause except the cranial injury was discernible. Fortunately even permanent cranial depressions rarely remain “uncompensated;” in one way or the other the equilibrium is usually restored; either the growth of the sutures and fontanelles is sufficiently augmented to make up for the lost space, or else the depressed cerebral substance undergoes a process of atrophy; the effect being the same, the brain subsequently receiving again its accustomed supply of nutritive fluids and undergoing unrestrained development. Many, however, of

¹ Kehrer, l. c., p. 150.

² Michaelis from Kehrer.

³ Kehrer, l. c., p. 151.

⁴ Fritsch, l. c., p. 302.

the surviving cases—perhaps a majority—do not carry their cranial lesions permanently, or even for any great length of time; restoration, more or less perfectly, to the normal condition taking place; in some cases, by gradual elevation of the depressed surface, through the agency of intracranial pressure and the elasticity of the bony walls; in others, by absorption of the projecting portion of bone and osseous deposits upon the external concave surface (Kehrer¹). In the case herewith presented, the depression remained without apparent change after the second day; but to what extent, if at all, it is to be held reponsible for the death of the child, it is manifestly impossible to state, considering, however, that the infant presented every appearance of perfect health during the first week, was then taken ill with symptoms of indigestion and diarrhea, and died after a three weeks' illness with aggravated symptoms of intestinal disorder, the writer is disposed to regard the cranial lesion as innocent of the fatal termination.

ON THE INDUCTION OF PREMATURE LABOR IN PUERPERAL ECLAMPSIA.

BY

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IN view of the growing interest manifested among obstetricians, in all quarters, upon this important subject, I am persuaded that a report of a case, which lately fell under my observation, wherein artificially induced labor for the relief of puerperal convulsions was successfully employed, will not be devoid of some special value, in strengthening the principles upon which the treatment of this baneful malady should be conducted.

Mrs. W., æt. 29 years, a primipara nearing the end of the eighth month of her pregnancy, was suddenly seized with a sense of dizziness while writing. Vision at once became so disturbed that she laid aside her pen and, soon after, lost consciousness in an eclamptic

¹ Kehrer, l. c., p. 152 et seq.

fit. This happened about 10 o'clock A.M., March 14th, 1879, and her medical adviser, a gentleman of undoubted skill, was immediately summoned; but before his arrival (between 10 and 11 A.M.), the convulsions had ceased, and her mind had sufficiently cleared up to enable her to answer all questions intelligently. She has informed me since, however, that she has no recollection of anything which transpired between the first seizure on Friday morning, and her final return to consciousness the following Monday morning, two days after delivery. Dr. Seeley, her physician, examined her urine soon after his arrival, but found no traces of albumen at that time. He prescribed a laxative, bromide of potassium, and absolute rest, engaging to see her again at 4 o'clock P.M. The patient was again seized with convulsions between 3 and 4 P.M., and upon the doctor's arrival he tested the urine once more, and found it, at this time, to contain about 90 per cent of albumen. The convulsions now appearing in rapid succession, counsel was advised, and, in obedience to a telegraphic summons, I visited the patient at 7.30 P.M. She was found lying upon her back in a deep comatose sleep, with fixed and dilated pupils; pulse 135 per minute; temperature 100° F. Digital examination of genitalia revealed only negative conditions; os uteri somewhat patulous, but not dilated; no mucus in the vagina, and no signs of labor; though the vertex, which was presenting, could be felt without great difficulty. An enema was now administered, which soon brought away a copious semi-solid dejection.

At 8.45 P.M.—the patient being still comatose, and the urine almost completely coagulating—with the approval of the attending physician, and the full consent of the friends of the patient (her husband being away), I proceeded to induce labor. The os was first dilated as much as possible with the finger, after which a flexible catheter was passed to the fundus uteri, between its walls and the membranes, and the end left coiled in the vagina. At 11 P.M., periodical moanings of the patient attracted attention. These moanings were accompanied with a general restlessness, which arose and subsided, in turn, with such regularity as to lead to the belief that labor was becoming established, a fact soon confirmed by a digital examination. The catheter, which had been partially dislodged, was removed about midnight, and without any unusual occurrence, labor terminated at 4 A.M. in the birth of a living male child weighing 4½ pounds.

Some difficulty was experienced in establishing respiration in the infant, but, after a few minutes' trial, our efforts were crowned with success, and the placenta was now promptly delivered by the process of Credé. There was no hemorrhage after delivery, and the convulsions did not reappear after the commencement of the induction of labor; the mother's milk came on Wednesday, the 19th, and on the fifth day after parturition all traces of albuminuria had disappeared. The patient's mind did not become clear until the morning of the 17th, two days after delivery, when, for the first time, was she made aware of her maternity. Convalescence was established as

early, and progressed as rapidly, as in ordinary cases of natural labor at full term.

April 27th, six weeks having elapsed since her accouchement, Mrs. W. appeared in usual health, while the infant had correspondingly improved, and now weighed ten pounds.

Among the noticeable features of this case, is the fact that the eclamptic fits came on without previous warning in the way of headaches, swelling of the feet and ankles, or other premonitory symptoms; her condition had been one apparently of perfect health up to the morning of the seizure; and, as she had not had occasion to consult her physician for some time previously, there are no means of determining when the albuminuria first appeared.

The rapidity of the labor may also be noted; the time occupied, from the first steps of its induction to complete delivery, having been about seven hours. Dr. J. G. Swayne, in the *British Medical Journal*, Aug. 8th, 1874, publishes an account of twenty cases in which he induced premature labor for various causes. In his cases the shortest time occupied was six hours, the longest sixteen days, the average being about three days.¹

Finally, the rapid disappearance of albuminuria after the induction of labor deserves notice, for, it will be remembered, after the fifth day from the birth of the child, no traces of albumen remained in the urine. A similar case of the sudden subsidence of albuminuria after the induction of premature labor, has recently been reported to the New York Obstetrical Society by Dr. McLane, and published in the columns of this JOURNAL.²

Within a comparatively recent date, obstetricians have so modified their views in regard to the etiology and pathology of puerperal eclampsia, as to compel the adoption of new methods of treatment; and it cannot be denied that many lives, under proper prophylactic and therapeutical management, are now saved, which, not very long ago, were abandoned to a hopelessly uncertain treatment, based upon theories as fanciful, as they have proven to be untenable. While many questions pertaining to this interesting and important subject may be regarded as yet *sub judice*, there are, on the other hand, some

¹ See also Am. Jour. Med. Sciences, Oct., 1874, p. 565 et seq.

² See AM. JOUR. OBSTETRICS, Oct., 1878, p. 794.

points which have been pretty definitely settled in the minds of the profession. Obstetric authorities very generally agree that it is a disease *sui generis*,—peculiar to pregnancy or following soon after; that the convulsions are reflex actions, excited by cerebro-spinal or medullary irritation of a uterine origin; that the gravid uterus, in the latter months of gestation, interferes with the return blood-current, in many cases, sufficiently to disturb the functions of the kidneys, and to act as a cause of cerebro-spinal congestion; that anemia, as well as plethora, is conducive to eclampsia; that uremic poisoning is an important etiological factor in precipitating an attack; that albuminuria of the puerperal state may, oftentimes, be regarded as an evidence of toxemia, rather than an invariable indication of structural lesion of the kidneys; and that the old classification of puerperal convulsions into the hysterical, epileptic, and apoplectic varieties, is an erroneous one, alike unsatisfactory in its pathology, and misleading in its therapeutics.

If puerperal eclampsia be regarded as a hysteroneurosis, superinduced by the toxic effects of the excrementitious elements of the urine now being stored up, and if it be admitted that this uremic poisoning is, in turn, caused by the mechanical pressure of the gravid uterus upon the renal emulgent veins, then we must, by a logical sequence, arrive at the conclusion that the first indication of treatment is, to put an end to the pregnancy which is the source of all this mischief.

Whatever view we may adopt as to the etiology of puerperal eclampsia, the first question which seems to confront us to-day, in ministering unto these cases is, "Shall we terminate pregnancy by the induction of premature labor?"

If the affirmative seems to present itself with cogent force, it would, nevertheless, appear that there are two sides to this question, as there are to most other questions. It is beyond the scope and limits of this paper to treat *in extenso* upon this subject, but a few observations, germane thereto, may be offered with propriety, in concluding this article.

Objectors to the employment of this method say, that it is one of extreme hazard; that it does not stop the convulsions in all cases; and that the act of parturition itself, nay, even the gentlest examination will, oftentimes, excite convul-

sions. These and many other reasons, not necessary to notice now, are urged against the artificial induction of labor by medical gentlemen whose opinions are entitled to the highest respect. They would try all other means first, and finally, as a *dernier ressort*, possibly induce labor. Precisely here is, I believe, where the chief error in all this matter is committed. If done at all, it should be before the mother's strength becomes exhausted, and while the child may yet be saved. It should be borne in mind that we are dealing with an affection dependent upon an active blood-poison which is keeping up an exalted nerve-irritation, and which, most likely, will not cease until pregnancy terminates. Moreover, every convulsion becomes an additional source of danger, not only to the mother, but also to the child, as well. To decline the employment of any remedial method on account of its extreme hazard, would be to deprive medicine of half its usefulness; for, as a rule, harmless remedies fail in great emergencies; neither is it to be expected that a remedy, or method, potent enough to save life under extreme danger, will be entirely devoid of hazard.

If it be urged that, in some cases, the eclamptic fits do not cease with parturition and delivery, the answer to this objection is, that in such cases some unusual circumstances are surrounding them which greatly intensify the blood-poison, and keep up the nerve-irritation in an exalted degree. The weight of testimony seems to be clearly in favor of the cessation of the convulsions after the expulsion of the fetus, in the majority of cases of induced labor.

It cannot be denied that uterine action will often provoke a convulsion; so, too, will an examination; while, on the other hand, the commencement of labor often marks the termination of the eclamptic spasms.

The proper time to induce premature labor in puerperal eclampsia becomes, at once, an interestesting and important question.

Will it be wise to resort to the measure early; or, shall it be postponed until other means shall have been tried, and found insufficient? While these are questions, speaking generally, which must be determined from the observation and study of each individual case, yet, I opine, there is more frequent occa-

sion to regret too great delay in the employment of this method, than that it has been invoked too early.

Observation and experience, those final arbiters of all questions medical, have settled some general principles pertaining to this whole subject, from which I formulate the following :

I.—It is wiser to err on the side of safety to the mother and induce labor too soon, than to temporize until it is too late. When the uterine body has attained sufficient size to interfere materially with the return blood-current, the indication is most clear. This will be especially the case if there is deep coma in the interval of the fits, indicating great activity of the blood-poison. Here the urgency is pressing and prompt action may save life. In hesitation there may be disaster.

II.—The amount of albumen in the urine is not a sure indication of the extent of the blood-poison, since, in many of the severer cases, there are but slight traces of albumen, and in others it is wanting altogether; while, on the other hand, albuminuria is frequently found in pregnant women who do not subsequently have convulsions.

III.—From this it may be inferred that the practice of inducing labor when there is albuminuria *without* convulsions is a questionable one; its employment as a necessity, at least, being limited to a small minority of cases. This branch of the subject has recently been so ably discussed in the columns of this JOURNAL, in an article from the pen of our distinguished countryman, Prof. Fordyce Barker,¹ that nothing in addition need be said now, except to commend the views therein set forth, as eminently wise, and full of sound, practical teachings.

BATAVIA, N. Y., April 30th, 1879.

¹ AM. JOUR. OBST., July, 1878, p. 449.

CORRESPONDENCE.

ON COMBINED EXTERNAL AND INTERNAL VERSION OF THE FETUS IN UTERO.

BY

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TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

A CERTAIN amount of misapprehension having arisen as to the priority of the practice of the above-named operation, I have ventured with some reluctance to ask permission to occupy a brief space in your JOURNAL, to endeavor to make clear certain points in the history of the operation as an act of justice to both claimants, namely, Dr. Wright of Cincinnati, and myself. I have already in the *Cincinnati Lancet and Examiner* made some remarks on the positions occupied by each of us, for the purpose of admitting, firstly that, so far as the case of cephalic version was concerned, Dr. Wright had the right of priority in the recommendation of the use of the external hand to press the breech of the fetus to the fundus uteri; or, in his own words, "to dislodge the breech," "to loosen the contact and perhaps diminish the force of adhesion;" and secondly, with the view of claiming a place for myself as an independent discoverer of this method of cephalic version; and also the priority of a much greater advance, namely, complete as well as partial cephalic version, by the use of the hand outside and inside the womb.

I should perhaps not have myself intruded this matter into your pages, had you not some time since published a letter of mine written under misapprehension; and I am anxious to correct this error, and at the same time those errors into which some writers in America have fallen as to the nature and scope of the plans suggested by Dr. Wright and myself.

In the year 1860, in July, I published in the *Lancet* some lectures on version by combined external and internal manipulation, and described the operation substantially in the same way as I afterwards did in the paper read before the Obstetrical Society of London, in 1863, and still further completed in the small work I brought out in 1864 (*Combined External and Internal Version*). The exact date of my

first case I cannot give, but it must have been somewhere about the end of 1858; though the idea was conceived some months before, and arose from conversation over a case where a friend was examining a pregnant woman, and remarking on the German external bipolar method.

But it was not till even some time after the publication of my work in 1864 that I became aware of the existence of Dr. Wright and of his essay, and this through a paper in an American periodical. I instantly sought in England for a copy, but could find none; I then through a foreign bookseller obtained one from America, which copy I believe is the only one in England, or was so till recently. The date which I affixed to this copy on receiving it is 1872.

And now for a word of explanation as to my former mistake. On first perusing the *illustrative cases*, I could find nothing more than had already been done, for in *none of the reports, nor in any of the immediately accompanying remarks*, either by Dr. Wright or the gentlemen associated with him, *is there a word alluding to the use of the external hand*. This is curious, but so it is. It was negligent of me not to have looked farther, but I think I can fairly make this a kind of legitimate excuse or explanation for not reading the last page or two; at any rate I did not, and wrote to your JOURNAL, denying that Dr. Wright had gone further than his predecessors. Possibly at first Dr. Wright did not see the importance of the use of the external hand, as he subsequently did, and I am inclined to think this from the great stress he lays upon the advantage gained by causing the fetus to glide in the natural curve of the interior of the uterus. But when he wrote his work he more clearly had in view the advantage of the external hand. However this may be, I was mistaken in expecting to find his plan illustrated by his cases, and thereby overlooked the description he gave of his plan. It was some years before I found out the error. I had been seriously ill, and had eschewed all professional reading; and it was not till perusing a paper of Dr. Quinn in the *Cincinnati Lancet* that I became aware of the error into which I had fallen. I instantly took measures to correct it in the same periodical, which I trust and believe were felt to be satisfactory to the claims of Dr. Wright.

When, having failed to find in what I supposed to be the whole plan of Dr. Wright an identity with my own, I also saw that some of the writers called the method I had advocated by his name, you will not, I think, wonder that I should have been surprised, and that I took an early opportunity of pointing out the error. For I had

considered the principal merit of my plan to consist in its being capable of producing a breech from a head presentation; and that I could also produce podalic or cephalic at will (but rather as an outcome of the complete minor operation), out of transverse presentation. Indeed the first case I did was one of complete podalic version in a case of placenta previa; whereas Dr. Wright's suggestion was intended to facilitate cephalic presentation in cases where the head was nearer to the os than the breech, and to this he especially directs attention in his paper, namely, that it was to be used in certain cases instead of ordinary podalic version (hand passed within only).

Leaving for a moment the pointing out of the great difference which exists between the *whole* of my plan and that of Dr. Wright's, let me briefly compare our two plans of cephalic version, for they differ sufficiently to show that they have separate origins.

As remarked before, Dr. Wright is particular to impress on his readers that the shoulders should not be "lifted up," "raised up," but pushed onward in the direction of the curve of the inner surface of the uterus, and that the movement of the presenting part must be carried out with this object, and then as an assistance to this purpose, "the left (external) hand, applied to the abdomen of the patient over the breech of the fetus, makes pressure so as to dislodge the breech, as it were, and move it towards the centre of the uterine cavity; the body is thus made to assume its original best position; the points of contact are loosened and perhaps diminished, and the force of adhesion in a good degree overcome." The elevation of the body of the child was to be accomplished by pressing the breech towards the fundus; and then the head would fall into the upper strait. Thus he says "without any direct action upon the head, it gradually approaches the superior strait, falls into the opening, and will, in all probability, adjust itself into a favorable vertex presentation.

Now the plan I have described is as follows; "Introduce the left hand into the vagina, as in podalic version; place the right hand outside to make out the position of the fetus and the direction of the head and feet; push up the shoulders with one or two fingers through the cervix in the direction of the feet; at the same time pressure by the outer hand should be exerted on the cephalic end of the child, this will bring the head down close to the os; then let the head be received upon the tips of the inside fingers. The head will play like a ball between the hands; it will be under command, and can be placed in almost any part at will. Let the head be placed over the os, taking care to rectify any tendency to face presentation. It is as well, if the breech will not rise to the fundus, to

withdraw the hand from the vagina, and with it press up the breech from the exterior. The hand which is retaining gently the head from the outside, should continue there for some little time, till the pains have insured the retention of the child in its new position, by the adaptation of the uterine walls to its form" (op. cit., p. 22).

The difference between these two plans is that Dr. Wright early applies pressure to the breech from the outside to direct it to the fundus, *waiting for the head to fall into the os*; whereas I, at the time I wrote, advised the use of the external hand; first of all *to press the head into the os definitely*, and then, if the breech is tardy in rising to the fundus, to press it up. Internally we advise the same use of the finger to the presenting part. If you refer to my book, you will observe that I make use of this command of the head to introduce a new plan for restitution of the prolapsed funis, and give instances of two cases where, in combination with cephalic turning, the funis was so restored. Others have since followed the plan with success. The waiting plan of Dr. Wright, it will be seen, cannot accomplish this. Possibly the explanation of this difference is in the difference of stage of the cases. Dr. Wright's cases narrated were very advanced arm and shoulder cases; whilst in most of mine the fetus was more mobile. From further experience I am inclined to think that a blending of these plans would be the wiser; that while we definitely press the head into the os, we should immediately after or alternately press the breech to the fundus, while the internal hand pushes the shoulder in the forward direction, and this leads me to repeat a remark I made in my letter to the *Cincinnati Lancet*. By tacking on to a plan the author's name we are insensibly checking progress; for the author becomes identified with it, and is somewhat checked from altering it, even should he afterwards discover a still better method; and although I might claim an equal right to have my name associated with this method of cephalic version, and entirely so in respect of podalic version by external and internal manipulation, yet advance may be hindered and one's own exertions checked by this.

But it must not be forgotten that Wigand *pushed up the breech from the outside, and waited for the head with his inside hand*; but he did not poke on the shoulders with this hand, he made use of posture as an aid.

But Dr. Wright claims nothing in the shape of partial podalic version, an alternative which my plan gives, should we fail to institute partial cephalic version; whereas this may be as readily managed, sometimes more so. We reverse the action and the breech is pressed down to the os, and the head lifted to the fundus

from the outside, while the shoulder is poked on in the direction of the head, and thus in malpresentations of the oblique kind we can select which pole we wish to make present, accomplishing this with a freedom which, if we are called in early, makes us master of the situation. Indeed if we are called in so early that we cannot make out the presentation, then, instead of waiting till the uterus has become troublesome, as soon as even one finger can enter the os, we can make our exploration and even correct the presentation before the rupture of the membranes. But the plan I have described does much more than this. By its means one can make a complete podalic presentation out of a cephalic, with only one or two fingers in the os uteri, and this with a precision and security which leaves little more to be desired. I think I am not exceeding my rights, when I claim that till I first described the plan in 1860, no one else had done so. So that in oblique presentations, as in the normal, we can alter them at will according to our desires and needs; and further, I believe that a breech may be converted into a cephalic presentation though as yet I have had no opportunity of trying. To call all this by Dr. Wright's name, I think, I may fairly complain of as being scarcely generous, and I am sure is contrary to his own desires. That he had no extension of his own plan of cephalic version in view, is clear from his work, where, at page 77, we find: "In turning by the feet, the hand must necessarily be moved considerably within the uterus, and often while it is contracting violently. In turning by the head, there is little, if any, direct contact of the hand within the uterus." In fact the lifting the breech from the side to the fundus of the uterus in cases of oblique presentation of the head was the only extent he advocated of the use of the external hand. I hope in making these remarks I shall not be thought to be endeavoring to lessen the value of Dr. Wright's plan of turning, as the contrary is my desire. No one can more fully appreciate its value than myself, who have had independently to struggle through similar difficulties inherent in a new operation. Instead of being anxious to antagonize, I feel like a co-worker, and am only pleased that our labor has been found of sufficient interest to attract the attention of so many (and in this feeling I am perfectly certain Dr. Wright himself joins), and that we have been enabled to make a useful addition to the advance of our profession, for which every one is, each in his own way, urgently struggling.

Yours truly,

J. BRAXTON HICKS.

24 GEORGE ST., HANOVER SQUARE, W.,
LONDON, May 9th, 1879.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, January 7th, 1879.

The President, DR. A. J. C. SKENE, in the Chair.

TWO CASES OF OVIOTOMY COMPLICATED BY EXTENSIVE ADHESIONS, ILLUSTRATING TWO METHODS OF TREATMENT.

DR. THOMAS reported two cases as follows :

The first was that of a French lady, 56 years of age, whom he saw in consultation with Dr. Aurango of New York. She had been a vigorous, healthy woman until two years ago, when symptoms of ovarian tumor began to develop. Abdominal enlargement steadily increased, and Dr. Thomas first saw the patient six months ago. An operation was advised, but the patient was adverse to its performance.

About one month ago, she nearly lost her life on account of obstruction of the bowels. After all ordinary means had been tried unsuccessfully, the ovarian tumor was tapped by means of the aspirator, a large quantity of fluid was removed, and then, by the aid of other measures, the intestines were freely evacuated.

Two weeks ago, ovariectomy was performed in the presence of Drs. Jones, Ward, Hunter, and Aurango.

When the tumor was exposed, it was found that the intestines were so closely adherent to it that they seemed to form part of the sac. The sac was drawn out as far as possible, and it at once became evident, on account of the completeness of the union between it and the intestines, and the large size of the blood-vessels, that its complete removal was impossible. Dr. Thomas decided to remove as much of the sac as possible, insert a drainage-tube, tie the sac firmly about it, and then fix the tumor with the tube in the lips of the abdominal wound. While examining for the other ovary, a second cyst, about the size of an orange, was found upon the outer wall of the large cyst. This was torn off from the large cyst and removed.

The left ovary was found to be cystic. It filled the hollow of the sacrum, and was with difficulty removed, although there were no adhesions.

A drainage-tube was introduced into the large cyst and the operation completed as above indicated.

The patient did perfectly well for forty-eight hours. At the end of that time she awoke with the most intense pelvic pain, from what seemed to be a refreshing sleep. It became necessary to produce semi-narcotism with hypodermic injections of morphine before the pain could be controlled. The temperature rose to between 104 and 105° F.; the pulse to 120 or 130. It was evident that acute peritonitis had developed.

The patient was lying upon a Kibbee's cot, and cold affusion was used to reduce the temperature.

The temperature was brought down readily, but the pulse remained unaffected.

The disease lasted four days in that manner, and on the sixth day death occurred, as it ordinarily does in acute peritonitis.

Dr. Thomas believed the patient had a better chance for recovery by reducing the temperature than if it had been permitted to remain at 104 or 105° F.

The second case was one which he saw in private practice in consultation with Dr. Emmet.

It was a question whether the abdominal enlargement was due to the presence of an ovarian tumor or a fibro-cystic tumor of the uterus.

They were led to the conclusion that a fibro-cystic tumor of the uterus existed, from the fact that the uterus was drawn so completely out of the pelvis that only the deepest pressure with two fingers in the vagina enabled them to touch the os.

The patient entered the Woman's Hospital, where opportunity was afforded for making a more thorough examination, and there the conclusion was reached that the tumor was ovarian. Two weeks ago, ovariectomy was performed.

When the tumor was exposed, it presented the ordinary appearance of an ovarian tumor. It was tapped and a large quantity of fluid and colloid material was removed. When traction was made upon the tumor, it did not move from the abdominal cavity. The tumor was opened, the hand and arm introduced, and a large number of cysts filled with colloid material were broken up and emptied. Still, no amount of traction moved the cyst. The doctor, having thoroughly cleansed his hands, then made an attempt to separate the cyst from the abdominal wall by means of the fingers. The adhesions were exceedingly firm, and he succeeded only to a limited extent. The hand was then introduced into the sac, and an attempt made to turn the tumor inside out by seizing the bottom of the

sac, but delivery in that manner was found to be utterly impossible. Very firm traction was then made upon the tumor, when it was found that the intestines were everywhere bound to the sac; the adhesions, however, were not so firm but that they admitted of separation.

Dr. Thomas decided to pursue a different course from that followed in the first case, and began to separate the intestines from the sac.

In the first case no such attempt was made because the adhesions were so firm that separation was impossible.

In the present case he was able to get between the intestines and the tumor without severing any very large blood-vessels. In about forty minutes all the attachments to the intestines, the abdominal parietes, and the pelvic cavity were separated and the tumor was lifted up, when to his great astonishment it was found to be firmly and extensively attached to the fundus of the uterus; so much so that, had it not been for the peculiar character of the fluid withdrawn, he would have thought an error in diagnosis had been made, and that he had to deal with a fibrocystic tumor of the uterus. The pedicle was treated as follows: It was first surrounded by a clamp which had been constructed for use in cases of complete removal of the uterus. The constriction was made complete, and then the pedicle was transfixed with long needles. The pedicle was then severed at some distance from the clamp, and the stump thoroughly cooked by means of the actual cautery. Heavy cautery-irons were used and heated to a red heat. The pedicle was cooked to the depth of about one inch, and although it was very vascular, no hemorrhage occurred after the use of the cautery.

The clamp was loosened from the pedicle completely, but was left upon the abdominal walls; the stump being held within its grasp by the needles. The clamp was permitted to remain in that position as a means for arresting hemorrhage in case it occurred.

The operation was completed at about 4 P.M. Dr. Ward visited the patient at 8 o'clock in the evening, when she was found pulseless and apparently dead. Absolute collapse had been produced by shock from the operation. Hypodermic injections of brandy were freely employed, and at the end of an hour the radial pulse could again be felt. From that time the case progressed favorably. At no time was the temperature high, except at the end of two weeks, when from some cause it reached 103° F. The patient was lying upon a Kibbee's cot, and although the weather was extremely cold and the temperature of the ovariectomy cottage very low, the cold

douche was used with the happiest results. The woman was apparently convalescent.

The two cases were reported to illustrate different plans of treatment for ovarian tumors which were so completely bound down as to render it questionable whether they could be turned out of their beds.

DR. SKENE asked if he would dare to drop such a pedicle back into the abdominal cavity?

DR. THOMAS replied that he should not. He did not mean to say that it would not be safe, but his convictions would not allow him to do so. He would not hesitate to drop the pedicle of an ordinary ovarian tumor back into the abdominal cavity after it had been treated in that manner, but the pedicle in the case reported was very solid, and probably contained a small portion of the uterine wall.

Stated Meeting, January 21st, 1879.

The Vice-President, DR. JAMES B. HUNTER, in the Chair.

FIBROID TUMOR DEVELOPED FROM THE SHEATH OF THE ABDOMINAL MUSCLES—SUCCESSFUL REMOVAL AND RECOVERY OF THE PATIENT.

DR. THOMAS presented a fibroid tumor which he had removed from the abdominal walls of a patient who gave the following history :

A little less than a year ago, a lady came to him from Canada and brought a letter from her physician who stated that she was advanced to about the second month in pregnancy. For four months a tumor had existed just at the epigastrium and had given the patient and her friends considerable anxiety. The physician had supposed that the tumor was connected with the omentum or large intestine, and was fearful that it was a malignant growth. When Dr. Thomas first saw it it was about the size of a duck's egg ; was of an irregular shape, pointed at its upper extremity, and was somewhat nodular, though not decidedly so.

The general health of the patient was good. It was regarded as a lipoma situated in the abdominal walls. The lady was recommended to return home and to have nothing done for the tumor until after her delivery. Two weeks ago she returned, and brought with her a child two months old.

The tumor had grown to such an extent that it measured *nine* inches in length by nearly *six* in breadth, and dipped deep toward the abdominal cavity. It had become the source of severe pain. At one point the tumor projected upwards, and seemed to reach as high as the diaphragm. That point seemed to interfere with respiration and gave the patient great distress.

Dr. Markoe saw the patient in consultation, and the conclusion was reached that it was probably a mural tumor.

The question of its removal was not an open one, for it was through an operation that the only chance of saving the patient's life could be offered.

The tumor was creating great physical and mental disturbance. One week ago it was removed in the presence of Drs. Markoe, Hunter, Ward, and Jones.

An incision eight inches in length was made in the abdominal walls and the tumor was carefully dissected out without the occurrence of much hemorrhage. When the peritoneum was reached, the tumor was hooked with a strong tenaculum and lifted, while with the fingers the peritoneum was gently and slowly pushed down until its point of attachment to the sheath of the abdominal muscles was reached. When the tumor was removed from its bed, the entire surface below looked precisely like a thin veil spread over the intestines; it was the peritoneum, and fortunately was not opened. The lips of the wound were brought together by means of deep sutures, and the patient made a good recovery. The temperature at no time rose above 102° F.

The operation was performed under the carbolic spray, because it was thought to be more than probable that the tumor communicated with the abdominal cavity.

Dr. Thomas further remarked that if he had found the tumor attached to either the stomach or the diaphragm, he should have removed only a portion of it, with the hope that what remained would undergo atrophy. Had he found it attached to the omentum, he would have treated the attachment like the pedicle of an ovarian tumor.

Dr. GARRIGUES remarked that in Langenbeck's clinic he had seen one such tumor about the size of an orange. It was attached to the sheath of the rectus muscle. The peritoneum was wounded in the operation for its removal, and the patient died of septic peritonitis.

Dr. JACOBI said that he recollected distinctly having seen two such cases, and had thought they were not so uncommon as was generally supposed.

PAPILLOMATA OF THE VULVA OCCURRING IN A GIRL NINE YEARS OLD—NO HISTORY OF SYPHILIS.

Dr. GILLETTE related the history of a case as follows: An apparently healthy vigorous German girl, nine years old, came to his office. It was noticed, as she walked, that it was apparently with considerable difficulty, and with her limbs considerably sepa-

rated. The mother stated that two weeks before, and just after the death of another child from an operation for a similar condition, she had discovered a growth upon the genitals of the girl brought to his office.

On examination there was found upon the labia majora a large papillomatous growth which looked very much like syphilitic condylomata. It was as large as his two fists.

The patient was sent to St. Francis Hospital. The growth was completely removed by means of Pacquelin's cautery, and apparently perfect recovery followed.

The sister who had a similar growth was operated upon at St. Mary's Hospital in Hoboken, and died of septicemia. No history of syphilis could be traced. Dr. Gillette remarked that he had never seen so large a papillomatous growth independent of syphilitic origin. It sprang from both the skin and mucous membrane. There was no history of antecedent vulvitis or vaginitis.

THREE CASES OF TETANUS FOLLOWING OVARIOTOMY, AND ONE AFTER DILATATION OF THE CERVIX BY SPONGE-TENT.

DR. THOMAS referred to two cases of tetanus occurring after ovariectomy. They were cases additional to those included in Dr. Parvin's report in Vol. II. of the Gynecological Transactions. He also referred to a case which occurred after dilatation of the cervix by means of a sponge-tent for the removal of a placenta. He did not attribute the tetanus to the effect produced by the sponge-tent, but to the general poisoning of the system.

Additional reference was made to a case of *chronic* tetanus following ovariectomy, in which recovery took place.

The treatment consisted in keeping the patient quiet, in part by the use of hydrate of chloral administered by the rectum, but the most benefit in that direction was given by hypodermic injections of morphine. A mild galvanic current was also used, and the patient expressed herself as feeling the better for it. Trismus and pain in the neck were the prominent symptoms, and were developed between the tenth and the fifteenth day after the operation.

Stated Meeting, February 4th, 1879.

The President, DR. SKENE, in the Chair.

DR. JOHN E. BLAKE reported a

CASE OF DYSTOCIA DEPENDENT ON FETAL ASCITES.

"I propose to relate the following case, of which a brief report appeared some years since in the *Boston Med. and Surg. Journal*,

because, having recently called attention to certain conditions of the fetal cranium as an occasional cause of lingering and difficult labor, the relation of this case, as illustrating how dystocia may depend on another abnormal fetal condition, seems to me not inappropriate at this time. The case may fairly, I think, be called a very remarkable one. Some of the peculiarities of the case, it is true, are not unfrequently met with and not worthy of special mention; but the chances against so many occurring together in one labor were almost incalculable.

1st. The case was one of twins. Now, although double pregnancy is so common, yet there were at least ninety or more chances against this pregnancy being double.

2d. The first child had ascites to such an extent as to render its delivery impossible, until some of the fluid was evacuated. How rare fetal ascites may be I cannot say, I know such cases are admitted to be exceedingly rare.

3d. The second child presented transversely, the whole arm being in the vagina.

4th. I consider the detachment of the placenta of the first child, and its expulsion whole and without much hemorrhage, the second child being still in the uterus, as unusual, as I think a profuse hemorrhage might have been expected. The following are the details of the case:

Called to Mrs. M—— said to have been in labor many hours. The family had become dissatisfied with the practitioner previously in charge, and he had given up the case and left the house. The pains, I learned, had been very strong, but when I saw the patient they had ceased. She was, however, bright, with a good pulse, and no symptoms of exhaustion. I found the foot of a child protruding from the vagina. This child may have presented by the feet, in which case another remarkable feature might be reckoned among those which make this case so peculiar; but I have not so reckoned it, because I could never find out if the gentleman who had preceded me had not turned the child. I could learn nothing from the family to lead me to think he had done this, and never ventured to ask him. He was very much my senior, noted for a very irascible disposition, and I felt, under the circumstances, as will be seen, that any allusion to the case could not be agreeable to him.

It was evident that some insurmountable obstacle opposed delivery, since such great force of traction had been used, before he gave up the case, that one leg had been torn from the child's body, and was connected with it by a slender attachment. This I divided and removed the leg. The other leg had been broken near the

knee and the ends of the bones forced out. Lest these should wound the mother, I removed the leg at the hip. Some authors speak of the child's abdomen, in cases of fetal ascites, as entirely blocking up the pelvic brim, nearly filling the cavity, but as being "soft and fluctuating." On examination, after removing the legs, I found the pelvis of the mother indeed blocked up in the manner described, but the enormous abdomen of the child was not soft, nor did I detect fluctuation. I satisfied myself that this distended abdomen was the obstacle to delivery, and I proceeded to eviscerate the child. On plunging a bistoury into the child's abdomen, a stream of serum gushed with great force from the vagina, striking the wall over two feet from the bed. It was then easy to deliver the child, a male, which had every appearance of having been vigorous and healthy up to the beginning of the labor. There was no anasarca. No effusion existed elsewhere. I presumed the ascites to have been caused by some obstruction to the venous circulation, but I was unable either to obtain possession of the child's body or to get permission to make any examination of it, so as to locate or establish the nature of such obstruction if it existed.

I found the placenta thrown off entire, and easily removable. There was a very moderate hemorrhage up to this time. Examination now revealed another child, whose arm protruded from the uterus. It was not difficult to find the feet, nor to turn and deliver. This child, also a male, was quite small; I do not think it weighed five pounds. It was fortunate for the mother that it was so small, otherwise she must have lost more blood before its delivery could have been effected than she could well have spared. The delivery was rapid, a second placenta was removed, and the uterus being grasped through the abdominal wall, and stimulated by a full dose of ergot, contracted soon and thoroughly, and the loss of blood, although large, was not more than this patient could well spare. The child was feeble, and did not live many days, but the mother never had a bad symptom, and made a rapid and complete recovery.

DR. NOEGGERATH remarked that he had not met with any cases of dystocia consequent upon ascites; but he had met with a case of enlargement of the abdomen, which was probably of less frequent occurrence as a cause of dystocia than the one mentioned in the paper. With one exception, it was the only case of the kind on record.

CASE OF CARCINOMA OF THE FETAL LIVER AS A CAUSE OF DYSTOCIA.

A midwife had charge of the case, as is usual in the smaller cities of Germany; but as the labor did not progress satisfactorily, a phy-

sician was called in. When Dr. Noeggerath arrived, the child's head was born. Both parents were remarkably healthy, and in them no explanation of the condition present could be obtained.

On examination, no obstacle in the upper portion of the body could be found. Dr. Noeggerath therefore removed one arm to gain space in the pelvis, but that did not permit the body to advance. Further examination showed that the enlargement of the abdomen was evidently the cause of the delay in delivery.

At first he thought the abdomen ascitic, and made an opening into it with a pair of scissors, but no fluid was evacuated. The opening was then enlarged, and all of the intestines that could be reached were removed, which made delivery possible by violent contractions of the uterus. There was evidently a large solid mass in the abdomen which interfered with delivery, and upon opening the abdomen an enormously enlarged liver was found, which covered all of the abdominal organs. A microscopical examination of the specimen by Dr. Otto Weber, subsequently Professor at Heidelberg, revealed the fact that it was carcinoma of the liver. Dr. Noeggerath had since searched the medical literature, and had found only one other case of this kind. All the other organs were healthy.

DR. SKENE called attention to a case which occurred in his consultation practice about a year ago. The wife of a physician was confined, and the labor being tedious, Dr. Skene was called in. He made traction with his finger in the axilla, and brought down one arm, and afterwards, by making strong traction, succeeded in bringing down the other. Examination showed an immensely enlarged abdomen, but by the use of the forceps the child was delivered. The regions of the liver and spleen showed extraordinary enlargement. The child was alive when born, but lived only a few hours. It never cried and its respiration seemed to be interfered with on account of the immensely enlarged abdomen. Dr. Skene was satisfied that the enlargement of the abdomen was due to enlargement of the spleen and liver, but as both parents strongly objected to a post-mortem, the exact condition of these organs could not be determined. The case presented some of the signs of enlargement of the liver and spleen produced by malaria, and as the mother during her pregnancy was the subject of malarial poisoning, it was thought probable that her condition during that time might explain the condition of things found in the child.

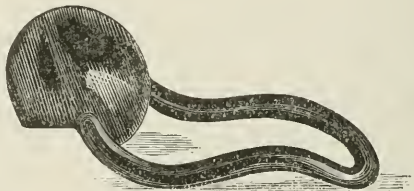
DR. M. A. Pallen exhibited a

NEW VAGINAL PESSARY,

which he had devised as an adjuvant to our present means of treating displacement of the uterus. He laid great stress upon the invariable observance of the rule, never to introduce a pessary until the mal-

position of the uterus had first been reduced. For that purpose he recommended the knee-elbow position and the use of Sims' speculum.

The pessary exhibited was made somewhat on the plan of Albert Smith's modification of Hodge's pessary, and was furnished with a movable, hollow sphere, which was a substitute for the superior and posterior crossbar of Smith's modification. The sphere was attached to the long axis of the pessary by means of two pins which enter small openings on either side, by means of which the longer or shorter portion of the sphere might be placed within or behind the calibre of the pessary. The sphere was made hollow for the introduction of saturated cotton, either for therapeutic or antiseptic purposes. The object of having the sphere movable was, so that, when it was placed within the fornix of the vagina, it would become a fixed point, never slipping up or down, whereas the anterior portions of the pessary rose and fell coincident with the rise and fall of the vagina in each respiratory act. The fixation of the sphere also prevented the slipping down of the pessary during defecation, and in cases of retroflexion, the filling of the bladder pressing backwards upon the uterus, caused the body of this organ to rise upwards, be-



cause it does not bend in the angulation of the flexion, as takes place in the straight bar of the Albert Smith, Thomas, or Hodge pessary. This, Dr. Pallen thought, was the great difficulty in getting any one of these instruments to remain in situ, if they were straight enough to throw the fundus forward and overcome thereby the flexion. In the Thomas, Albert Smith, or Hodge pessary, with the instrument sufficiently short to accommodate itself to the posterior wall of the vagina, the angulation of the flexion was sure to be increased. If the pessary was long enough to throw the fundus and body forward, it was sure to slip through the vagina during defecation or micturition, or if the patient assumed the squatting position.

The indications for the use of this pessary were in cases of retroflexion and retroversion, with partial laceration of the perineum, and more particularly in cases of partial rectocele.

The advantages of the pessary were, the shortening or length-

ening of the sphere where such irregularity or parallelism between the rectum and vagina exists as in the milder forms of rectocele and sundering of the perineum with laceration of the vaginal mucous membrane or skin raphe.

DR. CHAMBERLAIN inquired of Dr. Pallen if he had found that the bulb would remain in the fornix of the vagina.

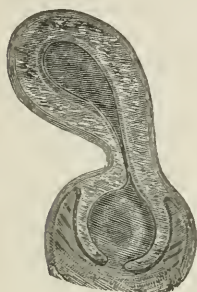
DR. PALLÉN replied that thus far in his hands it had remained there without much trouble.

DR. NOEGGERATH remarked that he saw one great advantage in the pessary presented, namely the mobility of the stem. He thought in a year we would be better able to judge of the merits of Dr. Pallen's pessary than now, for we would then have time to practically test it. He thought Dr. Pallen laid undue stress upon first replacing the uterus before a pessary was used, for that was an obvious rule which all doubtless observed. He recognized the general use and value of the method which Dr. Pallen recommended for the reduction of a retroflexed uterus, namely, that of placing the patient on her knees, reducing the uterus and then introducing the pessary, but he had found that, if the patient was placed upon her back, and the uterus then brought into a condition of anteversion with the sound, that the pessary could be easily introduced over the sound, while the sound was in the uterus. He claimed for this method a double advantage. First, it took less time, and second, the dislocation could be much more easily reduced than when the patient was upon her knees. The reason why a pessary did not always uphold a uterus was thought to be, not the construction of the pessary, but the condition of the posterior wall of the vagina. If there was a short and rather muscular posterior wall, no matter what shape of pessary was used, it would never replace a retroflexed uterus, unless the bulb was rather broad, and the posterior wall was put upon the stretch, in consequence of which the utero-sacral ligaments were brought into action. Under such circumstances we might occasionally succeed in replacing a dislocated uterus. Dr. Noeggerath also directed attention to the fact that all women were not of the same size, some were above and some were below the average height. If pessaries were inserted in tall women, more trouble would result from their use than in patients of ordinary size, or of small size, for the reason that the pelvis in those women was less inclined than in smaller women. That was so true that Dr. Noeggerath ventured to state that he could go into a Dispensary Room, where there were many women, and pick those out who had retroflexion, without making any examination whatever, and that, too, without many mistakes. They had a broad pelvis, and were very tall, and from the position of their bodies, their pelves were very little inclined. It was in those cases that the greatest difficulty was experienced in replacing and keeping the uterus in proper position.

PECULIAR NON-PUERPERAL DILATATION OF THE CERVIX.

DR. MUNDÉ presented a sketch of a peculiarly formed cervix, which had come under his observation at Mount Sinai Hospital.

The patient was a woman forty years of age, and the mother of five children; the last child was born six years ago. She had presented herself on account of hemorrhage, having flowed threetimes during the two months previous. Upon examination, he found a sharp flexion. He could pass his fingers into the cervix as easily as in a case of retention of the placenta after abortion.



The cavity of the cervix was dilated sufficiently to contain a good-sized walnut. The internal os was somewhat dilated, but he could not pass his finger through it. He could not make out that this condition had any relation to the patient's flowing and supposed the case to be simply one of malformation of the cervix. In looking over the literature of the subject, he had found no case of this kind recorded as occurring in a non-puerperal woman. Dr. Mundé offered no explanation of the condition of things, other than that there was paralysis of all the circular fibres of the dilated vaginal portion, which had followed her last labor, six years ago, or, in other words, a condition of sub-involution of the cervix particularly.

Stated Meeting, February 18th, 1879.

The President, DR. A. J. C. SKENE, in the Chair.

ADENOMA OF THE UTERUS.

DR. WATTS presented a specimen of adenoma of the uterus accompanied by the following history: It was removed from a patient 42 years old, married, and the mother of five children. The last child was born nine years ago. Soon after the birth of her last child, she lost her husband and remained a widow until three years ago. Menstruation had always been regular until after her second marriage, when it ceased for five months. She was then taken with severe flooding which lasted four days, and was without pain. The hemorrhage ceased and menstruation again went on regularly. There was no miscarriage at that time. No further hemorrhage occurred until the winter of 1877-'78, when in the course of three or four months five or six profuse hemorrhages occurred. Since that time there has been no hemorrhage, but she had suffered from pain in the back and pelvis, the pain occasionally shooting down into the limbs. There had also been some trouble regarding micturition and also some pain during defecation.

On introducing the finger into the vagina, the os uteri was found

very fully dilated, and within it was a mass which he thought to be the presenting portion of a polypus.

The uterus was evenly enlarged and reached nearly as high as the umbilicus. The general condition of the patient was poor; her complexion was sallow; she had fever with sweatings, and it was evident she was suffering from septic poisoning which had existed for some time.

Dr. Watts supposed that the uterus contained a polypus which was becoming necrotic from pressure, and that the patient was suffering from septic symptoms produced by that condition. She was sent to a hospital and ergot was given with the view to stimulate the uterus to expel the polypus, but it produced no effect whatever in bringing the mass into the vagina. The patient was then placed under the influence of ether, and an attempt was made to remove the mass. The finger was introduced into the dilated cervix and a tumor about the size of an English walnut, which seemed to be attached to the upper portion of the cervical canal, was removed. The cervix was much distended by the tumor, but the internal os was so closely contracted that the doctor found it impossible to introduce more than the tip of his little finger into it. Still he thought he could recognize by touch a mass within the cavity of the body of the uterus.

The woman was removed from the operating table to the bed, and no unpleasant symptoms followed the removal of the tumor from the cervix. Quinine was given. The septicemic symptoms, however, continued. About a week later, the internal os was dilated by means of Barnes' dilators, and an attempt was made to remove the mass found in the uterine cavity. When the cavity was reached, three pedunculated tumors were found. The remaining portion of the uterine cavity was apparently filled by lobular growths, which came from the wall of the organ. It was found impossible to remove any of the growth except the three tumors presented. The operation was not severe, but the septicemic symptoms continued to increase, the discharge became profuse and offensive, and the patient finally died with well-marked symptoms of septicemia. An autopsy could not be obtained.

The tumors had been submitted to Dr. Francis Delafield for microscopical examination, who made the following report:

"The tumor removed by you from the uterus has the structure of an *adenoma*. The basement substance is composed of smooth muscle and connective tissue, like the wall of the uterus. Imbedded in this are glandular follicles lined with cylindrical epithelium and looking like the glands in the upper part of the cervix uteri."

EMBRYO THREE WEEKS OLD.

DR. MUNDÉ presented an embryo which was brought to him by Dr. Isaac Oppenheimer. The history of the case was briefly as follows: The woman was thirty-six years of age, the mother of four children, and had had three miscarriages. A few months ago she had a miscarriage, after which she went six weeks without any show whatever. In the mean time she had sexual intercourse. Six weeks after the miscarriage she was, as she supposed, again unwell, but the flow was much more profuse and continued longer than usual. She discharged several clots which she showed to her physician, who found that, with a single exception, all of them readily dissolved in water. On examination of the undissolved mass, it was thought to be a remnant of the placenta retained after the former miscarriage. It was taken for microscopic examination to Dr. Heitzmann, who, after removing a portion of it and finding that it contained embryonic tissue, studied the specimen farther, and discovered that it was a perfect embryo, which Dr. Mundé thought was not more than three weeks old.



a, Natural size; *b*, magnified 5 times.

Reichert, Breuss, and Löwe-Beigel had described very young ova—two or three weeks old—which, however, contained no embryo, and therefore had doubtless undergone partial degeneration. The youngest healthy ovum with embryo of about two weeks was described by Thompson. The next was by Coste, one 15 or 16 days old. The third was by Beigel again, of about the same age. It was sent him by Dr. Hoggan of London, and the embryo measured 4 mm. in length, the ovum 7 by 9 mm. in diameter. The umbilical vesicle was distinctly visible, as also the heart, a rudimentary extremity, and two large and two small visceral plates.

The embryo which Dr. Mundé exhibited was larger than the last one mentioned, for it measured 8 mm. in length. The rudiments of the upper and the lower extremities were visible, the eye was very

distinct, one large and two small visceral plates, the umbilical vesicle was in perfect condition, as also the caudal extremity. In point of size it could be placed fourth in the list, and certainly did not exceed the age of three weeks.

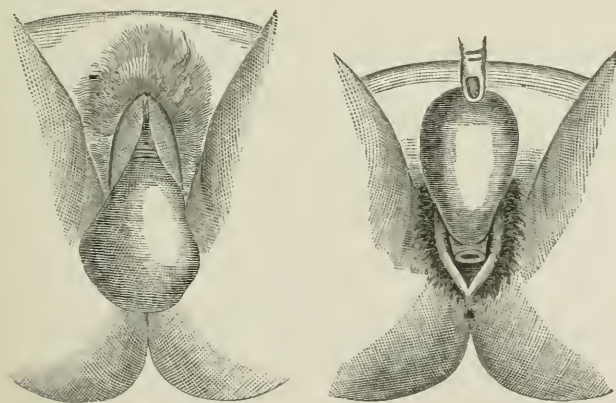
Unfortunately it had been at once placed in strong alcohol and kept there several weeks, so that it became distorted and opaque.

DR. CHAMBERLAIN remarked that about ten years ago he presented to the Society an ovum which was only ten days old. At least it was only about one-half the size of the specimen presented by Dr. Mundé.

DR. NOEGGERATH remarked that he examined the specimen presented by Dr. Chamberlain, which was about the size of a large pea, but he was not able to find any embryo; he found simply traces of the membranes.

CYST OF THE VAGINA.

DR. WATTS reported a case with the following history: A hospital patient, æt. 32 years, stated that she had not had any menstrual trouble until about eight months ago, when her monthly periods began to recur every two weeks and were rather more profuse than usual. Six years ago she was delivered of a child. The labor was natural, but it was followed by some form of pelvic in-



flammation which kept her in bed for two or three months, and immediately thereafter she felt a tumor in the vagina which she thought was her womb. The tumor increased in size, became visible, and during the last two years it had been external to the vulva. On examination the appearance presented was exactly that of complete procidentia of the uterus with complete cystocele. On placing his finger at the bottom of the mass, where he expected to find the os,

he did not find it, but by lifting the tumor he discovered that the os was behind it and just within the vulva. A sound could not be introduced into the tumor through the urethra. A sound passed into the uterus to the depth of four and a half inches, but upon careful examination it was found that the depth was due almost entirely to the great length of the cervix; the cervix being over three inches long.

Diagnosis of cyst of the vagina was made. The cyst was aspirated and the fluid obtained was found to contain considerable cholesterolin and abundance of oil globules. It seemed that the cyst had elongated the cervix, but had not displaced the body of the uterus. It measured nine inches in circumference and contained five and a half oz. of fluid. A portion of the anterior wall of the cyst was removed, the surface was painted with iodine, the cavity was stuffed with cotton, and the case was progressing favorably. The cyst-wall was lined with cylindrical epithelium.

DR. NOEGGERATH related the history of a case as follows:

About two months ago, he was called to visit a patient, an unmarried woman 65 years of age, who was said to have complete procidentia of the uterus. He made a hasty examination under the clothes, and found what he supposed was a completely prolapsed uterus. It seemed to be constricted tightly by the vulva, was considerably swollen, and it was evident from surrounding circumstances that it could not then and there be reduced.

The woman was accordingly removed to Mt. Sinai Hospital, and upon examination Dr. Noeggerath found what he thought was a prolapsed uterus in a state of ante flexion. The os uteri pointed backwards, and above was a rounded hard body occupying the position in which one would naturally expect to find the body of an ante flexed uterus. The patient was placed upon her side, and at the end of two days the mass was easily and entirely reduced, and then the apparently ante flexed uterus disappeared. He then found, to his astonishment, that the anterior wall of the vagina was occupied by a large tumor which at first he thought was a cystocele. He then dragged the uterus down, and found that the mass followed and assumed the exact shape of an ante flexed uterus. Examination was then made through the bladder, and he reached the conclusion that he had to deal with a large cyst of the vagina. He opened it by means of Pacquelin's cautery, but its walls had become so thickened that collapse did not follow the removal of the fluid. Strong sutures were then carried through the base of the cyst and the surfaces were united. The wound healed, but the prolapse of the uterus was not cured.

The case, therefore, illustrated the fact that even when causes which have acted in producing prolapsus uteri were removed, the prolapsus was not cured. In cases of prolapsus uteri of long standing, it was probable that the dome shape of the diaphragm was

changed, became flattened, so that the intestines no longer had the space in the abdomen requisite to allow them to rest in the abdominal cavity without producing undue pressure upon the pelvic organs.

DR. WARD referred to a case of cyst of the vagina which opened spontaneously. Cure, however, did not follow. The sac was then slit open, the cavity was stuffed with cotton containing iodine, but the case remained uncured. It was necessary to bring the surfaces together by means of sutures before cure was effected.

Stated Meeting, March 4th, 1879.

The President, DR. A. J. C. SKENE, in the Chair.

PUERPERAL CONVULSIONS—CHLOROFORM—PILOCARPIN—RECOVERY.

DR. T. G. THOMAS related the history of a case of puerperal convulsions as follows: About one month ago, he was called in consultation with Dr. Lyon, of Second ave., to see a woman who was suffering from puerperal eclampsia. The patient was a multipara, æt. 38 years. She had not experienced any trouble in any of her previous confinements. Dr. Lyon was sent for at about the middle of the ninth month, and found her in the usual condition which admonishes us that there is danger of puerperal convulsions being developed.

There was edema of the feet, legs, face, eyelids, and arms, slight dyspnea and tendency to snoring. The urine was examined, and although secreted in quite large quantity, was found to be loaded with albumen. Dr. Lyon thought, however, that by proper management she might be carried through without convulsions. Diaphoresis was established, also mild catharsis, and the patient's diet consisted largely of milk. She improved very markedly; still the albumen did not disappear from the urine, and as labor approached, there was a marked diminution in the quantity of urine daily passed by the patient.

Labor came on, and the woman was delivered of twins, and no convulsion occurred. Within three hours after delivery, she was seized with a very violent convulsion. The first was followed, within fifteen or twenty minutes, by a second convulsion, and that by a third, and then the patient became violently maniacal. She was so maniacal that, later in the day, and after having five or six convulsions, it required four or five strong women to hold her in bed, and her language was of the most impure and violent character. Dr. Thomas advised that the violence of the patient be at once overcome by chloroform, and that she be kept steadily under its influence for some time. After a severe struggle, chloroform stupor was fully produced. He further advised that hypodermic

injections of pilocarpin be used, and after diaphoresis had been established for two or three hours, that catharsis be produced. Dr. Lyon had not bled the woman for the reason that she lost considerable blood at delivery. A hypodermic injection of pilocarpin was given, and within one hour the patient perspired profusely. The chloroform was continued, but with less decision than at first. Within the second hour the injection of pilocarpin was repeated, and profuse diaphoresis soon appeared. Twenty grains of calomel were then placed upon the patient's tongue, and she was thoroughly purged. On the following morning, the kidneys began to act, and there was a very profuse flow of urine. Whether the relief to the kidneys was accomplished by the diaphoresis and catharsis he was unable to say. The renal secretion was in every way improved. She was kept slightly under the influence of chloroform and pilocarpin, and without having any more convulsions, went on to complete recovery.

The case was reported as one in which pilocarpin seemed to exert a remarkably beneficial influence, as the symptoms seemed to warrant an unfavorable prognosis, and it was Dr. Thomas' impression that the pilocarpin contributed materially towards saving the patient's life.

DR. REYNOLDS remarked that his experience in the use of jaborandi in the treatment of acute desquamative nephritis occurring after scarlet fever had been unsatisfactory.

DR. H. T. HANKS related the history of a case as follows: He was called to visit a patient, and when he arrived she was in convulsions at the eighth month of pregnancy. Labor was induced as rapidly as possible, and the child was delivered at the end of about one hour and a half. Fluid extract of jaborandi, in half-drachm doses, was given by the mouth every half-hour for two hours and a half, when profuse perspiration was established. In the mean time, the urine was drawn and examined, and found to be solid on boiling. The patient partially rallied from the convulsion after the child was delivered; was able to recognize her husband, to raise her head, and to partially turn upon her side. A cathartic dose of calomel and jalap was administered, an enema of warm salt-water given, and her bowels moved profusely. A few hours later, the patient had another convulsion, and soon after died. Dr. Hanks felt quite sure that the jaborandi did not do any good, but he could not say positively that it did any harm.

DR. SKENE remarked that there were two questions before the Society for discussion: 1st. What was the value of jaborandi, or its active principle pilocarpin, in the treatment of puerperal convulsions; and 2d. Did it control the convulsions by relieving the uremia or by exerting some specific action upon the nervous system? Certainly if the article was to behave in the hands of others as it

had under the observation of Dr. Barker, according to his reported cases, we should be cautious regarding its use.

DR. NOEGGERATH suggested that in Dr. Thomas' case it would be difficult to separate the effects produced by the jaborandi, since the patient at the same time took large doses of chloroform.

DR. THOMAS admitted the force of the suggestion, but thought it quite probable that in all the cases reported by Dr. Barker, other remedies were used in connection with the jaborandi.

DR. NOEGGERATH remarked that, in a case which terminated fatally during the use of pilocarpin, its administration, even after other remedies had been employed, proved something, whereas, if several remedies were used at the same time where recovery ensued, the administration of the pilocarpin proved nothing whatever. In the first instance, it was proved that pilocarpin had no effect, and in the second case it was not proven that it had any effect. The cases reported by Dr. Barker, therefore, had a value, for although other remedies may have been used, the pilocarpin did not change the final result.

DR. MUNDÉ remarked that the position taken by Dr. Barker was that the remedy not only did no good, but that it was positively injurious.

DR. GILLETTE related the history of a case of puerperal convulsions in which jaborandi seemed to exert almost a specific beneficial effect. He first saw the patient late in the second stage of labor. She was suffering from intense headache, her face was flushed, her eyes were almost strabismic, and convulsions seemed threatening. Chloroform was at once administered, but just as the head passed the perineum she had a very serious convulsion, and from that passed into coma. He bled the patient about $\frac{1}{2}$ xii., but shortly after the bleeding another convulsion occurred, chloroform was renewed, and an attempt was made to establish diaphoresis, after administering a stimulating enema, which produced a slight discharge from the bowels. The patient was wrapped in flannel blankets wrung from hot water, and was surrounded by bottles filled with hot water. A half drachm of the fl. ext. of jaborandi was given, and in about twenty minutes profuse perspiration appeared. Immediately upon the appearance of the diaphoresis, the patient came out of the coma. At the end of about two hours, another convulsion occurred. The jaborandi was repeated and diaphoresis was sustained for nearly twelve hours. No further convulsions occurred, and the patient gradually progressed towards recovery. About the tenth day after, albumen reappeared in the urine, intense headache came on, jactitation ensued, and it seemed almost certain that another convulsion would occur. Jaborandi was administered, in about half an hour profuse diaphoresis was produced, the headache abated, the jactitation ceased, and the patient was soon perfectly comfortable. The same experience was repeated twice afterwards. Dr. Gillette thought that the chloroform used at the beginning was not the curative agent altogether, for the reason that the jaborandi was so efficient when given alone, and so many days subsequent to delivery. In this case the remedy did not produce salivation.

DR. THOMAS remarked that he did not wish it to be understood that he was an advocate of jaborandi or pilocarpin in these cases, for he had not yet reached any definite conclusions upon the question. He thought, however, that we could hope much from the drug. We all believe that puerperal convulsions are caused by some urinary poison collecting in the blood. We could readily understand, therefore, that stimulation of the emunctories, which was produced by jaborandi or pilocarpin, would be likely to accomplish much in the way of removing that poisonous material. He could not conceive how the amount of diaphoresis or ptyalism produced by the remedy should influence the patient fatally. He thought we had no right to argue, from the effects produced by the drug in the treatment of the nephritis following scarlet fever, what it would do in puerperal nephritis, for the two conditions were essentially different. If we were to suppose that this drug could cure all cases of puerperal convulsions, we were expecting too much of it. There were many cases of puerperal convulsions in which injury was done to the brain early in the attack, especially by central hemorrhage, and neither pilocarpin, nor any other drug would affect such cases. Besides, in a large number of cases, puerperal convulsions inevitably proved fatal. All that could be hoped from the drug was, that it might prove to be a useful adjuvant, and if we could get that out of pilocarpin it was very important. He did not yet think that the evidence against the remedy was very strong. Dr. Thomas then referred to a case in which he had the same experience just related by Dr. Gillette. The case which he saw with Dr. Lyon, and the one just referred to, were the only successful cases he had had. He had had two fatal cases; in one, no method of treatment would have been of any avail; and in the other, the remedy was not used so as to develop its characteristic effects.

DR. NOEGGERATH remarked that he was not at all convinced, from the paper by Dr. Barker, that pilocarpin was such a fatal remedy as he had tried to prove it to be. Besides, the experience of other physicians was in its favor. He did not think the number of cases reported large enough to lead to any final result.

DR. SKENE gave the history of the only case in which he had used jaborandi. He was called to see the patient early after delivery. She had one convulsion before, and several subsequent to the birth of the child. Anesthesia was not continued long enough to modify the condition. Pilocarpin was administered hypodermically, with marked and characteristic effect, and repeated twice in twenty-four hours. The patient had no marked convulsion afterwards—simply convulsive movements—but finally died. He had no reason to think, however, that the fatal issue was produced or hastened by the remedy, but believed that the woman died on account of the disease, and in spite of all treatment. Dr. Skene believed it was a fact that the depression and debility which followed the salivation or diaphoresis produced by pilocarpin was greater than that which followed, to the same extent, the use of other remedies. But because there was a certain amount of depression following the use of a

remedy, he could not understand that it was necessary to produce marked depression in order to obtain its beneficial effects. He thought the drug fulfilled indications which we had tried to fulfil in other ways, and that it would not be right to set it aside without further trial.

DR GILLETTE referred to the use of the drug in the Maternity Hospital. In a certain number of puerperal cases, the temperature would suddenly rise, at the end of the second or third day, to 103–4° F. Quinine had been used, but without much effect. The home staff had resorted to jaborandi in those cases, and had found that it acted admirably in reducing the temperature; thus aborting the threatening symptoms of apparent septicemia.

CONGENITAL DENUDATION OF THE GLANS PENIS, AND OCCLUSION OF
THE MEATUS URINARIUS.

DR. H. J. GARRIGUES reported a case as follows:

On the 28th of February, 1879, he delivered a primipara by forceps of a boy weighing nine pounds and a half. The last menstruation had begun May 4th, 1878.

Immediately after delivery he noticed that the anterior half of the glans penis protruded from the prepuce and was of a dark brownish-violet color, but being much occupied with the mother, he did not pay any particular attention to the child.

As the boy had not passed any water the next morning, he examined him carefully and found the following condition: The anterior half of the glans was uncovered and of the said dark color. The prepuce overhung it, forming a kind of closed pouch, and was of normal color. It seemed to be grown together with the glans. There was not the least trace of a meatus urinarius.

He fixed the glans between thumb and forefinger and scraped with a half-sharp curette in the place where it ought to be, when it appeared without any wound being made, the agglutinated surfaces separating from one another. He introduced a probe a couple of inches, and found the passage free. As the child, notwithstanding, made no water, a few hours later he introduced a flexible catheter, English No. 1, without meeting any resistance, and when it entered the bladder the urine rushed out on the sides of the catheter. Next he applied a blunt curette to the sharp line of demarcation between the prepuce and the glans, and at the same time drawing the prepuce back, he succeeded with some little difficulty in separating it entirely from the upper part of the glans and the corona, in which latter place appeared a small quantity of white smegma.

Thus a full-sized, well-developed glans was brought to light. The surface of the glans was covered with intact mucous mem-

brane, while the prepuce presented a raw surface. It could not be made to cover the anterior half of the glans. Fine linen rags dipped in sweet oil were introduced in order to keep the prepuce separated from the glans, and changed daily. After that the boy has urinated spontaneously, and the raw surface of the prepuce is fast healing.

Agglutination between the prepuce and the glans was so common that it might be looked upon as physiological, although sometimes it gives rise to urinary and other troubles, and requires treatment. But it was the first time he had seen the glans uncovered in a new-born child. As a rule, the prepuce protrudes even quite a distance in front of it. He believed also that the agglutination of the lips of the meatus urinarius was rare. He saw once a similar case of agglutination of the nymphæ and of the urethra in a new-born girl, causing retention of urine. In that case the nymphæ were easily separated with a silver probe, and the probe being introduced into the bladder, the urine rushed out. After that she made water spontaneously.

NITROUS OXIDE TO FACILITATE EXAMINATION AND TREATMENT OF INSANE PATIENTS.

DR. SKENE spoke of the pleasant result which he had obtained in the use of nitrous oxide in conducting the examination and treatment of uterine disease among insane women. Quite a number of them were manageable without an anæsthetic, but many were entirely unmanageable. In the County Insane Asylum he had found that it was almost impossible to administer ether, whereas he had not found any patient, who could be induced to sit in a chair, who objected to taking the gas. That nitrous oxide had been employed in gynecological surgery was well known, but he was not aware of such an extensive use as he had given it among insane patients. Dr. F. C. Shaw, of Brooklyn, President of the New York Neurological Society, had stated to him that he had not seen any ill-effects follow its use, but, on the contrary, he had seen many cases in which it acted as a tonic.

Stated Meeting, March 18th, 1879.

The President, DR. A. J. C. SKENE, in the Chair.

DEATH FROM APOPLEXY OF THE LIVER AND RUPTURE OF THE CAP- SULE DURING PREGNANCY.

DR. JAMES W. McLANE presented a liver that had been removed from the body of a patient who gave the following history :—The

¹ Bokai : Jahrbuch für Kinderheilkunde, 5, 1.

woman was within one week of the termination of her second pregnancy. She had had no sickness during her pregnancy, except chronic diarrhea. On the morning of the 10th of November, she was seized with severe pain in the region of the liver, and soon after was noticed to be pale, had a rapid pulse, and other symptoms of shock. She suffered from more or less of pain during the day, and on the following morning pain was so severe that a homeopathic physician was called who said that she was suffering from "compression of the muscles." Her pulse was 120, the temperature was not taken, she was very pale, and there was intense pain in the region of the liver. The physician prescribed morphine. On the morning of the 12th of November, she was taken to the Nursery and Child's Hospital, where she was first seen by Dr. Beckwith, House Physician, to whom he was indebted for the specimen. When admitted to the hospital, the patient was pulseless at the wrist, was very pale, and was suffering chiefly from exhaustion. A few minutes after admission she vomited, and fell upon the floor dead. On immediate examination it was found that the fetal heart was silent, and therefore no attempt was made to remove the child.

An autopsy was made twelve hours after death. The viscera were all healthy, except the *kidneys*, which were in an advanced stage of diffuse nephritis, and the *liver*, which presented the following appearance. There was an interstitial hemorrhage into the substance of the organ, and leading from that central mass to the capsule was a clot. The capsule was ruptured, and there was about one quart of blood in the peritoneal cavity. The cause of death was the sudden escape of blood into the abdominal cavity.

The uterus contained the fetus, the membranes, and liquor amnii, and the plug of mucus was still remaining in the cervix, although labor had partially commenced—at least so far as related to the shortening of the cervical canal.

The case was interesting chiefly on account of the continuance of the hemorrhage for two days, and the instantaneous death produced by rupture of the capsule of the liver and the escape of blood into the peritoneal cavity.

CASTANEA IN WHOOPING-COUGH.

DR. RODENSTEIN then read a brief paper in which he gave his experience in the use of castanea in whooping-cough.

"I do not propose to enter upon the physiological effect of the *Castanea vesca*, but merely to relate the therapeutical action of the medicine in a number of cases of whooping-cough that have lately come under my observation and treatment.

I will briefly state each case from notes taken at the time :

1st Case.—Agnes McP., æt. 8, on November 15th was noticed to have regular paroxysms of coughing during the night with a decided whoop ; these attacks came on about ten times during the night ; she grew rapidly worse, paroxysms increased until she had them forty or fifty times in the twenty-four hours ; almost at the beginning of the disease the child had such severe convulsive seizures that she had an extensive subconjunctival ecchymosis, which involved first the entire left eye, and afterwards the right ; so extensive was this lesion that I feared the loss of sight, should the severity of the paroxysms last much longer.

At this stage of the disease I put the patient upon the ext. castanea, a teaspoonful every four hours, so that she would take 3 vi. in twenty-four hours ; this was continued for ten days regularly ; the quantity was then gradually reduced as the paroxysms became less frequent, vomiting also decreased. Although the mucous became very ropy, thick, and difficult to discharge, by using the liq. ammon. acid. and spts. nit. dulc., this difficulty was overcome.

The only other remedy I was obliged to give was, when the constant cough prevented the child from sleeping, I gave brom. potas. gr. x. and chloral hyd. gr. v., two or three times during the night. In three weeks from the commencement of the use of the castanea, my patient was cured, and discharged from the sick room. During that period she took 12 $\bar{\text{z}}$ of the medicine.

2d Case.—Eleanor McP., æt. 5, on Jan. 1st was noticed to whoop. Although she had shown catarrhal symptoms for over a week, and simultaneously with paroxysms of coughing and vomiting had several attacks of epistaxis, as soon as the nature of the disease was discovered, she was put upon the ext. castanea, and took about 12 $\bar{\text{z}}$ within three weeks. At the expiration of that time she was discharged, perhaps a little too soon, for she returned in a few days with a decided bronchitis, and also commenced to whoop again. She then took about 6 $\bar{\text{z}}$ more of the castanea and is now perfectly well of both bronchitis and pertussis.

3d Case.—Mary D., æt. 13, presented herself Jan. 13th with the pathognomonic symptoms of pertussis, and was, like the others, put under treatment of castanea for ten days, taking an $\bar{\text{z}}$ of this medicine daily, but with no effect, the disease making very rapid progress. I found that the medicine was inert. In the two former cases I used Close's preparation of Brooklyn ; in this case a preparation made from the dry leaves. I then obtained Close's article, and found it operated as in the former cases : the patient recovered in five weeks.

4th Case.—Elise P., æt. 12, who came under my care Jan. 1st,

was seized with an alarming attack of epistaxis with almost the first violent paroxysm of cough, and this hemorrhage came on five or six times in twenty-four hours, until she became very much exsanguinated; she took about 13 $\bar{5}$ of the ext. castanea with dialyzed iron, and recovered her health in six weeks.

5th Case.—Clara R., æt. 14, was put under the castanea treatment Jan. 1st; she had paroxysms of coughing and kinking as many as from forty-five to fifty in twenty-four hours; on the 24th of Jan. she seemed cured of pertussis, and was sent back to school. On the sixth or seventh day after, she returned with acute nephritis, but no return of the whooping-cough.

6th Case.—Caroline P., æt. 15, was taken with whooping-cough on Jan. 1st, took 12 $\bar{5}$ ext. castanea, and was perfectly well by the 20th of the same month.

7th Case.—Madeline C., æt. 8, was taken to the city on account of a severe cough, on Dec. 24th, remained away four weeks; on her return she still coughed, and had several severe paroxysms and kinks during the night; she was placed under the former treatment, and in two weeks was well.

8th Case.—Maud L., æt. 2, had a light attack and recovered in a few days, after taking about 5 $\bar{5}$ of the medicine. I must, however, state, in deference to the theory of well recognized medical authors, that whooping-cough is a disease of months' duration, that I treated these cases with the advantages of large rooms, well lighted and ventilated, heated by steam, and kept at a constant temperature of 70°; I also had the most faithful nurses.

I will say but one word more of the ext. castanea, that I have implicit faith in its powers as an abortive of pertussis, for during the time that the above cases were under treatment, there were a number of other children who were suffering from catarrhal symptoms, and all remedies seemed to fail, until they were put under the treatment of castanea, when in a few days their cough ceased. This treatment is, of course, open for future trial, as a few well authenticated cases cannot settle its efficacy."

Dr. WATTS remarked that he had used castanea in the treatment of whooping-cough in his own family, but in smaller doses than employed by Dr. Rodenstein. He had given it in twenty-drop doses of the fluid extract every four hours during the day-time, and all three children were thoroughly well at the end of six weeks. The remedy had a marked effect in diminishing the severity of the paroxysms. It was aided at times by a mixture of chloral and bromides.

Dr. RODENSTEIN, in answer to a question, remarked that he had not used the remedy as a prophylactic, but had given it to those who coughed without the whoop, and with good results.

DR. REYNOLDS referred to the low rate of mortality, and the treatment of whooping-cough in the Foundling Asylum. Among two hundred cases, only three deaths had occurred; one from chicken-pox, one from intestinal trouble, and one from pneumonia.

The treatment had consisted essentially in the use of chloral and bromide of potassium—two grains of chloral, two grains of bromide of potassium, and one-twelfth of a grain of ammonia.

DR. LEE remarked that he had not known of any epidemic of whooping-cough being cut short by treatment. The mortality at the Foundling Asylum had been small, and the best treatment which he had employed was a strong solution of quinine. The only treatment which mitigated the whoop in the early stage was change of air.

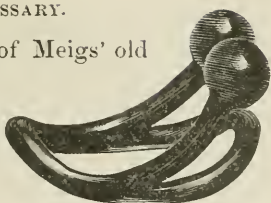
DR. DAWSON remarked that he had not yet seen a case in which the symptoms of whooping-cough had not been mitigated immediately by the quinine treatment. He had not seen a case which lasted more than six weeks under that treatment, and he had seen cases in which the paroxysms were cut short one-half within twenty-four hours. He thought the success of the plan depended largely upon the frequency with which the remedy was administered. He sometimes ordered a dose to be given every half-hour. In very bad cases he usually employed chloral at night. The strength of the solution of quinine he employed was two or three grains to the ounce, and of that half a drachm could be given every half-hour, principally for its local effect.

DR. McLANE remarked that his own experience led him to believe there was no specific for whooping-cough; but, at the same time, there were agents which materially diminished the frequency of the paroxysms. He had used the fluid extract of castanea with fair results, but not so good as obtained from the use of the bromides, especially the bromide of ammonium. He treated the cases from the commencement with as large doses of bromide of ammonium as the patient would bear. When the throat became irritable, he made a local application, once or twice, of a twenty-grain solution of nitrate of silver, and then pushed the bromide until almost complete anesthesia of the fauces was produced. As soon as possible, a change of air should be secured, but he had not supposed that such change was particularly beneficial in the earlier stages of the disease. Local application of nitrate of silver to the fauces by a sponge, and pushing the bromide of ammonium until the child lost taste for food, had with him yielded better results than the castanea.

DR. REYNOLDS remarked that, in the worst cases in hospital practice, he did not hesitate to send the patients out of doors, even in winter weather. He had noticed that when they remained inside, in a temperature of probably about 70° F., the cough and paroxysms were severe, but when outside, they had no cough at all. He therefore did not hesitate to send the patients out, and to keep them out as much as possible, purposely to check the cough. Even a change to a fresh, clean ward he had found to be beneficial.

MODIFICATION OF MEIGS' RING PESSARY.

DR. PALLER exhibited a modification of Meigs' old ring pessary which consisted in the attachment of a ramus with two balls. It was designed for cases of anteversion and antelexion. The instrument was made of soft rubber.



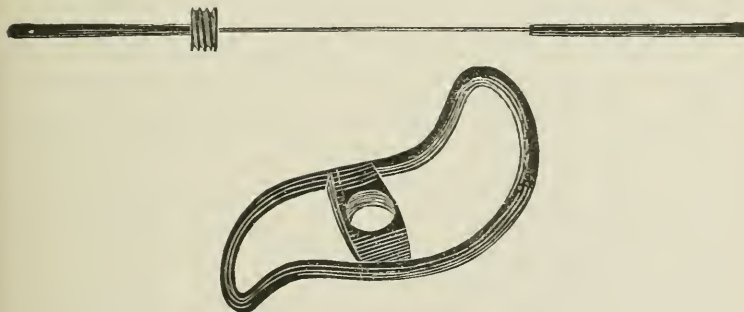
Stated Meeting, April 1st, 1879.

The Vice-President, DR. JAMES B. HUNTER, in the Chair.

DR. JOHN BYRNE presented a new

STEM PESSARY,

which he had successfully employed in certain reducible cases of anteversion and retroversion, but more especially the latter. Thus far his experience in its use had been confined, almost exclusively, to women who had been pregnant or borne children, and, though fully satisfied as to its great utility in other and exceptional cases, he preferred for the present to employ and recommend it for this class alone.



His method of applying this instrument was described as follows: "Presuming the case for treatment to be one of uncomplicated retroversion, or a flexion previously modified by sponge or tangle tent, and that the capacity and condition of the uterine cavity have been duly estimated and considered beforehand, the vaginal part of the pessary of proper size and curve is first to be inserted in the usual manner.

By the aid of a Sims retractor, or a self-retaining speculum, such as I am in the habit of using, the pessary is now to be exposed *in situ*, and the platform being moved backward or forward, as the case may be, until the os uteri can be seen through the central opening, the stem is to be passed into the uterine cavity, and

fixed by a few turns of the handle. The stem-carrier and speculum are next to be withdrawn, a finger introduced, and the direction of the stem, and with it the axis of the uterus, changed to any degree desired by moving the platform.

The stem may be removed by the aid of the carrier, and without using a speculum."

The instrument had proved perfectly satisfactory whenever due attention had been given to diagnosis and the selection of cases, and Dr. Byrne considered it as safe as any other mechanical means ever adopted for the relief of such deformities.

In response to a question by Dr. Mundé, as to whether the pessary could be removed by the patient, Dr. Byrne replied that it could not, as at present constructed.

DR. MUNDÉ stated that he had used stem pessaries in dispensary practice, but never without attaching a string so as to enable the patient to remove it, if occasion required. He had had patients wear stem pessaries two months, removing them at menstrual periods. Most patients, however, had been unable to wear them longer than a few days at a time.

DR. BYRNE remarked that, in all of the cases he had used this form of stem pessary, he had taken care to have the patient quietly maintain the horizontal posture for three or four days, or sufficiently long to accustom the uterus to the presence of the foreign body, after which, if no inconvenience was experienced, the patient was permitted to walk about. He had not used the pessary in a single instance where the patient passed from under his observation. He thought that any pessary with a stem, to be of permanent benefit, in retroversion, should have the stem fixed, the uterus and parts being in condition to bear such.

DR. MUNDÉ thought the pessary objectionable on account of the stem not moving with the uterus, and inquired of Dr. Byrne why he did not use a hinge-joint.

DR. BYRNE said that he considered the non-use of a hinge-joint the principal argument in favor of his instrument. If a stem pessary had no fixed base, he thought it could be of no use except to convert a flexion into a version.

DR. PAUL F. MUNDÉ reported

A SUCCESSFUL CASE OF INTRAVENOUS INJECTION OF BEEF PEPTONE
FOR EXHAUSTION FROM HEMORRHAGE FROM UTERINE CANCER.

"Patient, 47 years of age, widow, mother of twelve children, last six years old; when first seen, about two and a half months ago, had been flowing slightly for nearly a year, but supposing the flow to be incident to the advent of the menopause, paid little heed to it. General health was beginning to deteriorate under the drain,

but there was no cachexia whatever, and scarcely any pain. Examination revealed a cancerous infiltration of the supravaginal portion of the cervix, the uterus fixed, and the only bleeding spot the gaping external os. The bleeding cervical granulations were removed by Simon's sharp scoop on January 26th last, and the surface cauterized with Paquelin's thermo-cautery, with the result of arresting the hemorrhage for nearly one month. As the cancerous granulations gradually redeveloped, however, fresh topical applications were needed, and Paquelin, nitric acid, ferri persulph., James' styptic (saturated solution of resin in alcohol), tannin and iodoform, chromic acid, and the sol. alcoh. of bromine, were all used in turn, with only temporary benefit. The hemorrhage seemed to come from a point higher up in the cervical canal, which the styptics did not reach, and during the last two weeks came on several times so suddenly and profusely as to saturate the tampons, which I applied every other day, and necessitated the instant summoning of a neighboring physician. On Saturday, 22d of March, I tamponed the patient thoroughly at her home (which she was too weak to leave), filling the excavated cervix with the powdered persulphate of iron. Sunday morning early, I was sent for and found quite profuse fresh hemorrhage. Tampons and persulphate reapplied. During the forenoon I was sent for again at a house where I was operating on a lacerated cervix; I therefore did not see the patient until an hour later, and found her again bleeding. Persulphate and tampons reapplied. Finding that the patient was rapidly growing so reduced that a fatal termination was imminent unless the hemorrhage could be arrested, particularly as for fully a week she had been scarcely able to retain nourishment, a few tablespoonfuls of milk and a few oysters daily excepted, I determined on the next day to remove the coagula of persulphate with which the cervical cavity was filled, and which I had not dared to touch before, to find the seat of the hemorrhage and endeavor to apply the styptic directly to it. Accordingly, at 10 A.M. Monday, 24th, I proceeded through Sims' speculum to remove the coagula of blood and iron which filled the funnel-shaped cervical cavity, and through which blood was again oozing. With Thomas' dull curette I gently scraped away the debris high up in the cervical canal, when suddenly a profuse hemorrhage, evidently arterial, from its bright-red color, set in, which the tampons which I hastily crowded into the vagina failed to check. Hardly had I mopped up one pool of blood in the vagina and seized a fresh wad of dry cotton to introduce it, before the blood welled out again with unabated force. My patient rapidly became blanched, exsanguinated as she already was (all

this scarcely lasted five minutes), when, in sheer desperation, I dashed a heaped teaspoonful of the dry persulphate of iron into the vagina, packed in all the cotton I could, and applied steady pressure with the hand, at the same time sending out for the nearest physician. Dr. F. A. McGuire, of East 53d street (who had been hastily called to the patient once before), kindly responded to my call, and arrived just in time to find the hemorrhage arrested, to my great relief, and contrary to my expectations. From my utter inability to arrest the flow at first, I had really feared the patient might die on the table. Dr. McGuire gave the patient several hypodermics of brandy which revived her somewhat, and she remained immovable in Sims' position, with constant manual pressure exerted against the tampon for eight hours, when I dared risk putting her in the dorsal position, and making her more comfortable on the table. The patient's pulse in the evening was 112, very feeble, extremities cool, temperature 100° . The patient's stomach still refused all nourishment but a little milk; the distended state of the vagina precluded the use of nutritive enemata; and, in view of her exceedingly exhausted condition, I thought her a fit subject for transfusion. It then occurred to me that my friend, Dr. George B. Fowler, had for some time been engaged in experimenting with a preparation of beef peptone, which he had injected without injury into the veins of cats, with the view of demonstrating the feasibility of introducing an already digested substance into the blood, instead of the defibrinated blood or warmed raw milk hitherto employed. (The advantage, besides, of having a substance for intravascular injection always ready without the inconveniences attending the transfusion of blood and milk is obvious.)

Dr. Fowler kindly agreed to see the patient with me the following morning, when, finding her still weaker, as she had taken no nourishment except a little milk during the night, we agreed to meet at three o'clock in the afternoon and inject the peptone. With the kind assistance of Drs. Fowler, McGuire, and Salin, of Stockholm, I opened the right median basilic vein (that being the vessel most easily exposed), and introduced the glass canula attached to the rubber-tubing leading from the glass funnel, this being the simple apparatus used by Dr. Fowler. Of course, the air in the tube was first expelled by allowing the fluid to be injected to advance to the very point of the canula, and then compressing the tube behind it until the canula was in the vein. The fluid, warmed to 100° F., and kept at that temperature by placing the tube in a basin of hot water, was slowly allowed to flow into the vein by its own pressure. The temperature of the patient when the injection

was commenced was 100.5°, the pulse 108. When about one ounce had been injected, the patient exclaimed: 'My head is bursting, it feels so full; it hammers.' Her cheeks began to flush, the eyes to project, the heart to beat tumultuously, although no dyspnea was complained of. As the quantity injected rose to two and one-half ounces, these symptoms increased in intensity, the patient complained besides of feeling confused in her head, and a profuse perspiration broke out all over her body.

When two and one-half ounces had been introduced, we thought it best to interrupt the proceeding for a few minutes, and then repeat the same quantity. The pulse had now fallen to 92, and was very much stronger; the temperature was 99°.

After ten minutes, the peptone was again allowed to flow, when an unfortunate accident terminated the injection. The rubber-tubing, which was not new, was found to have cracked close to the funnel, and the fluid escaped into the basin. This accident necessitated the withdrawal of the canula from the vein, the readjustment of the tubing, and the reintroduction of the canula into the vein. Unfortunately the latter had collapsed so much that I could scarcely find its lumen, and finally, when I thought I had the canula safely introduced, it was not till about one-half ounce of the peptone had escaped into the cellular tissue of the elbow, that the mistake was discovered. The canula was withdrawn, and I attempted to introduce it into the median cephalic vein at its junction with the basilic, but the former vessel was too small. We, therefore, concluded to cease the operation, as the patient, whose head still felt like bursting, began to show signs of depression, which seemed alarming after her late momentary stimulation. She complained particularly of a feeling of 'internal coldness' all through her body. A hypodermic of brandy was given. Pulse 120 one hour after injection. Ordered brandy per mouth *pro re nata*. We left her at 6 P.M. feeling rather anxious at the sudden collapse. I saw her again at 8.30, and found that at 8 Dr. McGuire had been hurriedly called, because she was delirious, wanted to get off from the table, and was in a pronounced febrile condition. I found her quiet (Dr. McGuire had given one grain of opium), pulse 130; temperature 101°, and apparently very feeble. I ordered *gtt. xv.* of the aromatic spirit of ammonia to be given every half-hour during the night, and as much brandy as she could be made to take. Up to this time she had rejected all nourishment. I left her with very little hope of her rallying, and rather expected to be notified in the morning of her death. Not hearing from her, I went to her house at about 9.30 next morning, and what was my surprise to find her

not only alive, but bright, cheerful, with really a slight glow on her cheeks, pulse 92, quite full and strong, temperature 99°, and feeling, as she herself said, very much better. She had slept the greater part of the night, and, in contrast to the whole past week, had taken a pint of milk during the night.

From that moment she began to take milk regularly, as much as two quarts a day; but having acquired a distaste for beef-tea, I directed it to be given by enema, of which she has taken three to four per day of three ounces each. I should say that, after a stay of fifty-six hours on the operating table, I risked the removal of the tampons to permit the enemata, and put her back to bed. The peptone effused into the cellular tissue above the elbow was all absorbed two days later, and no trace of the operation but the incision remained.

The unirritating quality of the peptone solution would thus render it useful for hypodermic injection, in cases of extreme urgency.

The patient sat up a little last Sunday, and is now taking beef-tea by the mouth, but I fear her improvement is of but short duration, for yesterday morning I was called to find her bleeding again slightly. Although I checked the hemorrhage at once, its bright-red color convinced me that the eroded artery is still patent, and will probably soon be the source of fatal hemorrhage, in spite of tampons and intravenous alimentation, which I have already made preparations to repeat in this case, should the indication arise.

It will be noticed that the peculiar symptoms during, and the alarming prostration and subsequent febrile excitement following the injection, correspond precisely with the effects of the injection of blood, and particularly of milk, as recently reported by Dr. Thomas and Dr. McDonnell of Dublin. In these cases, also, after a temporary prostration of several hours, a vigorous reaction ensued, and great improvement was manifested.

There can be no illusion in this case, either as to the necessity of the operation, or its beneficial effect; to the former the gentlemen who were present will testify, and in the latter, Dr. McGuire, who is present this evening, and saw the patient shortly before me on the morning following the injection, fully concurs with me. I am convinced that, in the enfeebled and exsanguinated condition of the patient, her inability to take nourishment would, without the intravenous injection, have resulted fatally long before this.

This case is interesting in two particulars: 1st. The intravenous injection of beef peptone, which has never been performed before on the human subject; and 2d. The occurrence of profuse, nearly fatal, arterial hemorrhage during the progress of carcinoma uteri. In the latest work on 'The Neoplasms of the Uterus,' by

Gusserow (Stuttgart, Enke, 1878), among the causes of death from uterine cancer no mention is made of hemorrhage, sudden and violent as it happened in this case. A traumatic hemorrhage it was not, for the blunt curette was merely used to remove coagula high up in the cervix, where the forceps could not readily be used.

It is important to note that the intravenous injection of peptone was employed in this case for the purpose of alimentation, quite as much as for that of stimulation; indeed, this is the chief feature of interest and importance in the injection of peptones, wherein their use differs from the infusion of blood and milk. By the introduction of blood we merely restore to the patient what she has lost through hemorrhage; the injection of raw milk, which is an undigested and, as such, probably unassimilable substance, acts (as does also blood) chiefly as a stimulant in increasing intravascular pressure. The intravascular injection of peptones, however, directly furnishes the blood, and through it the general system, with nutriment in a proper condition for immediate assimilation, and the patient is thus fed through the veins, instead of through the stomach or rectum. Should future experience confirm the favorable conclusions drawn from the present case, it is obvious that the ease with which beef peptone is obtained and introduced into the veins will render it a valuable means of prolonging life in cases of exhaustion from marasmic diseases, where the stomach and rectum refuse to retain food. When further observations have taught us precisely how much can be injected each time without serious risk (dyspnea, collapse), I see no reason why a patient should not be kept alive by the intravascular injection of peptone so long as he has a pervious vein left in his body of sufficient size to admit a canula.

The exact scope and value of this method can, of course, be determined only by experience. I certainly shall not hesitate to repeat the operation in the first suitable case which comes under my observation."

At the request of Dr. Mundé, DR. GEO. B. FOWLER described somewhat in full the nature of peptones. He said they were complex bodies, the exact composition of which was not known. Their use for intravenous injection was suggested from reading Dr. Thomas' article on the use of milk for the same purpose. This was in May, 1878. Since then he had been endeavoring to make peptones on a large scale. Dr. Fowler referred at some length to the processes of digestion and various confirmatory experiments. He said, if egg albumen were precipitated by a mineral acid, that it would not readily traverse animal membranes; but that, if it were subjected to digestion, a substance resulted which was no longer coagulable by heat or mineral acids and only slightly by acetic acid

and cyanide of potassium, and that the substance thus obtained would traverse animal membranes rapidly. That was albuminose, or, as the Germans called it, peptone, and was the result of digestion. Dr. Fowler experienced great difficulty in obtaining reliable pepsin, and finally was obliged to resort to its preparation from pigs' stomachs, and obtaining therefrom glycerine extracts. The substance which Dr. Mundé used was the result of keeping a solution of finely chopped beef in a weak solution of hydrochloric acid for several days, and then filtering and forming into peptone.

Dr. Fowler had bled cats almost to death, and by the injection of six ounces of peptone had restored them to life. He has kept rabbits alive without loss of weight by its injection under the skin, giving them no other food. The odor of peptone was distinctly that of beef. It was possible to keep peptone for several days.

DR. PALLÉN remarked that he had paid some attention to intravenous transfusion, and was struck with the history of Dr. Mundé's case, and particularly with the smallness of the quantity of the material introduced. He had made transmission by the direct and indirect manner three times. In all of the cases the operation was for acute anemia, and all of the patients died. In one case where Dr. Watts was present, the patient had cut through all of the large vessels of the neck, except the carotids, in his attempt at suicide, and was found pulseless. The indirect method was tried, but the patient died. In two cases pure blood was taken directly from the arm of the donor. Dr. Pallén would have preferred, in the case related by Dr. Mundé, to have used what the French call auto-transfusion, that is, forcing the blood out of the extremities by means of a firmly applied roller bandage, or better, by an Esmarch bandage.

Dr. Pallén inquired of Dr. Fowler, if he had bled animals after transfusion with these peptones and then observed what quantity of blood was lost to produce death.

DR. FOWLER replied that he had not done so, but that he had collected all of the urine and had not found any of the peptones in it.

DR. PALLÉN thought that a large loss of blood would require the injection of a greater amount than was used in Dr. Mundé's case, and that the beneficial effects in the case referred to must have been the result of increased blood-pressure, rather than from nutrition, and that any fluid would have done as well for the increase of blood-pressure.

Von Müller had proved that, when transfusion had been employed in animals that had been bled, the arterial pressure rose to normal height but never beyond, however much more blood might be added. Another point which was not in accord with the experiments of Lesser, Müller, and Heidenhain was, that the tension of the contents of the vessels was at its height frequently when a quantity even less than four per cent of the weight of the body so injected had been used. This was in experiments upon dogs. Further, in many of those cases the individual did not die from the want of

blood, but from the want of the movement of that fluid. Hence it would appear that in Dr. Mundé's case the beneficial results were due to the fact that the injected material caused a movement of the blood which had stagnated in the smaller vessels, in consequence of the hemorrhage.

Dr. Pallen thought that the peptones of Dr. Fowler were admirable for their nutritive properties, but as to whether the effects in the case referred to were due to those properties or to their stimulation, was a question the settlement of which required a great deal of study. Dr. Pallen inquired what were the evidences of excessive anemia in the case reported by Dr. Mundé.

Dr. MUNDÉ replied that it was the extreme pallor of the patient, her great prostration, and the amount of blood lost. He had seen more blood lost in post-partum hemorrhage, but those patients were generally in good condition. This patient had been losing blood for a year, and although she was blanched from the successive hemorrhages which she had sustained, she was not in a state of collapse.

Dr. GILLETTE, from the fact that there was no collapse and only extreme pallor, could not see the indication for the operation which was resorted to. He had seen several cases of women suffering for a full year from repeated hemorrhages in consequence of cancerous or fibromatous growths and yet not go into collapse. Although the doctor thought it was not logical to attribute the recovery of the patient to the amount of food injected, he considered it interesting to learn that such a fluid could be used.

Dr. GARRIGUES thought it ought not to be lost sight of that the strongest argument in favor of the use of blood in transfusion was, that it contained blood-corpuscles, which were alone the carriers of oxygen. When blood was used it should be human blood, for it had been proven by the experiments of our best physiologists that blood from another animal, not only did no good, but positive harm; it not only did not increase the quantity of blood, but killed the other blood-corpuscles.

Dr. FOWLER expressed the opinion that, if stimulation was aimed at in transfusion, almost any fluid would answer, but if the patient was emaciated and the digestion out of order, a fluid should be injected which could be assimilated. As to milk, it contained albuminous matter, with caseine, fat, sugar, and mineral salts, which composition was not analogous to any known digested matter. If caseine was injected into the circulation, it would rapidly appear in the urine, as was also the case with raw albumen and cane sugar. But of the normal digestive product of sugar, that is glucose, fifty times as much could be injected into the circulation without appearing in the urine, as of cane sugar. Dr. Fowler had verified the accuracy of the experiment of Bernard of injecting albuminose into the circulation, and with the result that none appeared in the urine. Besides raw albumen and caseine, milk contained fat-globules surrounded with a coating which could not be dissolved in the blood. Dr. Fowler thought there were both physical and

chemical objections to the intravenous injection of milk, and it was on that account that he had proposed the use of peptone, which, in action, had so far corresponded with the theory previously established.

DR. MUNDÉ said, as the smallness of the quantity of the injected material had been a matter of surprise to some, he wished to state that it was intended to have injected double the amount, and, had it not been for alarming symptoms, he might have injected six ounces. In a future case he would endeavor to inject as much as six ounces. The small quantity, he thought, only showed in favor of the experiment, as the improvement could not have been due to anything else, for the patient took nothing else, and fluid pressure alone could not have produced the observed improvement.

DR. GARRIGUES remarked that, of all the heterogeneous substances proposed for intravenous injection, he considered that proposed by Dr. Fowler the best, because it was nearest like what Nature injected into the veins. But notwithstanding the nutritious properties of that preparation, it was not fit to carry on respiration, which was probably more important than nutrition; hence the superiority of blood, which contains blood-corpuscles, the only carriers of oxygen. He considered it doubtful that so small a quantity of nutritious material could produce so decided an influence as ascribed to it by Dr. Mundé, while the great want was for more arterial blood in the brain.

DR. FOWLER remarked that, although he did not propose to inject blood-corpuscles, he did propose to inject that from which blood-corpuscles could be made. Two ounces of the peptones were equal to six ounces of beef. Therefore Dr. Mundé's patient received about seven and one-half ounces of beef, surely an amount of nutriment not to be despised and sufficient at all events, if introduced every day, to prolong life.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, January 2d, 1879.

The President, JOHN H. PACKARD, M.D., in the Chair.

The following officers were elected for 1879 :

President, LEWIS D. HARLOW, M.D.

Vice-Presidents, EDWARD L. DUER, M.D., R. A. CLEEMANN, M.D.

Secretary, W. H. H. GITHENS, M.D.

Treasurer, D. MURRAY CHESTON, M.D.

Curator and Librarian, W. H. PARISH, M.D.

Publication Committee, WM. GOODELL, M.D., JOHN H. PACKARD, M.D., JAMES V. INGHAM, M.D., R. G. CURTIN, M.D.

Councillors, H. LENOX HODGE, M.D., JOSHUA G. ALLEN, M.D., ROBERT P. HARRIS, M.D., CHAS. H. THOMAS, M.D.

DR. RICHARD A. CLEEMANN exhibited an

IMMATURE FETUS IN WHICH THE CORD HAD TWICE ENCIRCLED THE
NECK AND LEFT ARM.

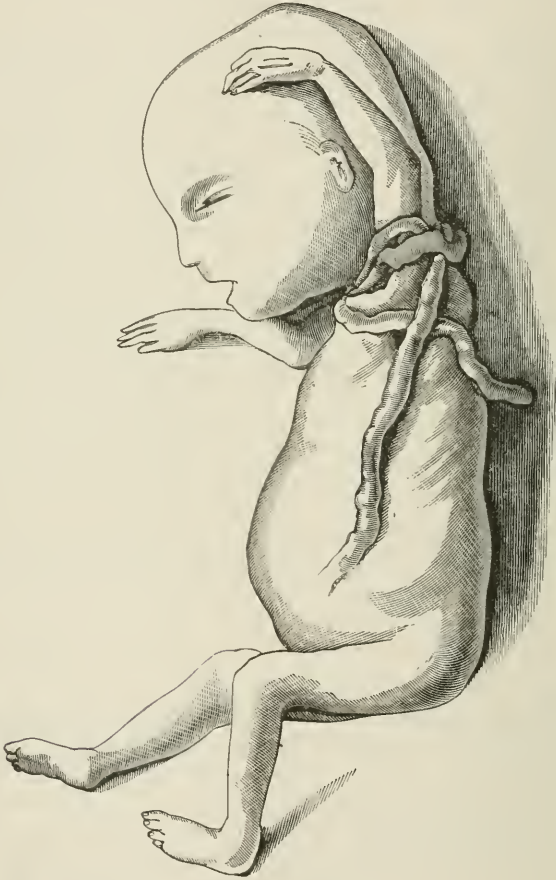
"I present this morbid specimen for Dr. Wm. Darrach, of Germantown. It is a dead fetus of about four months' growth; there are no anomalies of development, but the umbilical cord is arranged about it in a curious manner. You see that the funis passes up across the chest to the left axilla; thence back of the left shoulder to the neck, round the right side of which it winds to the front of the throat; thence it reaches the left arm (which, you observe, with the forearm is elevated perpendicularly and closely applied to the left side of the head); it traverses the inside of the arm, now turns outwardly, a little beyond the shoulder, and going about it reaches again the back of the neck, whence it passes once more round the right side of the neck and across the throat to the arm, upon which it now is nearer the shoulder than at first, so that it has crossed its first coil; from here it reaches the nucha and right side of the neck a third time, and passes now freely across the chest.

The cord is therefore coiled upon itself nearly three times, twice encircling together the upper part of the left arm and neck, and binding the former closely to the left side of the head in the perpendicular elevated position before referred to. [The drawing, for which I am indebted to my friend Dr. J. H. Packard, which was sketched after the preparation had been some time in a solution of chloral, makes the coils of the funis appear less tightly drawn than they were in the recent specimen; they were besides somewhat further apart on the arm, and I am not certain that in the first place the placental end of the funis underlaid the umbilical extremity as represented.]

This case recalls those instances in which a limb of a fetus has been found so closely wound about by the funis that the member seemed about to be entirely severed—instances which have given rise to the opinion that the so-called spontaneous amputation of a limb in utero sometimes occurs from the constriction of the umbilical cord, though this seems to Montgomery hardly possible.¹ It

¹ Signs and Symptoms of Pregnancy, etc., by W. F. Montgomery, A.M., M.D., M.R.I.A., p. 540, Amer. Edition, Philada., 1857.

would indeed seem more probable that, before the encircling funis had accomplished such a result, the circulation in its own vessels would be arrested by the constriction, and the death of the fetus supervene. Yet the deep furrows about the limb in which the cord has been found prove that such a result does not follow, at least for a certain time, and the examples on record of a living child



being born with a knot in the funis also show a certain tolerance of compression, probably when slowly induced, on the part of the cord. In the case before us, an additional danger appears in the interference with the circulation in the brain which the coils of the cord about the neck must have occasioned, and I am not prepared to deny that we find here the cause why this fetus perished.

I would also call attention to the fact that it is the *left* arm which is involved in this case, which follows the rule which obtained in all the cases collected by Montgomery a few years ago, that the members of the left side are those which suffer this constriction.

DR. WM. GOODELL considered this specimen an example of an early stage of the operation of intrauterine amputation. He alluded to similar cases which had been reported to the Society by Drs. Geo. Pepper and A. Nebinger, in which the same accident of constriction of a limb by a loop of the cord had occurred and in which the atrophy of the limb was marked.¹

DR. SINKLER had exhibited to the Society a specimen in which the pressure of the cord had caused a deep sulcus. The case had progressed no further, as the consequent compression of the cord had caused the death of the fetus.

DR. CLEEMANN called attention to the remarkable fact that the accidents of this class which have been reported have generally affected the limbs of the left side.

DR. ATKINSON had observed the same fact and thought it might have some connection with the oblique position of the fetus in utero.

DR. WM. GOODELL exhibited an ingenious

NEEDLE FOR INSERTING WIRE SUTURES,

devised by Madame Gaillard, of San Francisco, Cal. The needle has, instead of an eye, a longitudinal female screw into which the suture wire is screwed. Its advantage lies in the fact of avoiding the sudden increase in size caused by the wire when passed through the eye of the ordinary needle.

DR. PACKARD called attention to the difficulty of always having wire to fit the screw, and suggested that a fine wire might be doubled before screwing it in.

DR. A. H. SMITH spoke of the accidental filling up of the needle by a wire broken short off. He did not think it would be as useful as the needle with loop of silk by which to draw the suture wire through the tissues.

DR. W. H. H. GITHENS exhibited a Jennison exploring sound. It consists of a number of fine steel rods united at their extremities and partially inclosed in a brass tube, the whole being incased in pure rubber. Any bend given to one end is shown by a corresponding curve in the opposite direction at the other extremity. It is intended to assist in diagnosing uterine flexions, versions, and tumors.

¹ Transactions, May 5th, 1870.

Stated Meeting, February 6th, 1879.

The President, LEWIS D. HARLOW, M.D., in the Chair.

DR. JOHN H. PACKARD read the history of a

CASE CONSIDERED BY SEVERAL EXPERIENCED PRACTITIONERS TO BE PURELY HYSTERICAL, BUT WHICH TERMINATED IN SUDDEN DEATH. AUTOPSY.

Miss M. B. W., æt. 20, in Jan., 1871, while menstruating, was very much alarmed, and ran a long distance. Ceased to menstruate and never had more than a slight show afterwards. Suffered greatly from neuralgia and hysterical symptoms.

She had had scarlet fever as a child; also slight rheumatism.

In April, 1872, she had a very severe hysterical attack; had been losing flesh and had lost control of left arm, also, to some extent, of right leg. Suffered from intense neuralgia of leg, relieved finally by morphia hypodermically. This attack was considered to be only hysterical.

On the 10th of July, I saw her in the evening at Atlantic City. She had been taken into the sea on the 8th, and had had a violent chill, with very tumultuous action of the heart.

She was in bed with a good pulse, somewhat dilated pupils, speaking incoherently, or rather a little thickly.

At 12 that night, I was called to her, on account of a violent hysterical spasm, which had, however, gone off entirely when I saw her. She was sleeping as quietly as possible, with nothing abnormal in pulse, respiration, or temperature.

At 4 A.M., I was again roused, and told that she was dead. I could not believe it, and spent some time in trying to revive her with ammonia and galvanism, but to no purpose.

An autopsy was made by Dr. W. W. Keen, on the 13th, about fifty-eight hours after death; the body having been kept in ice.

Body well nourished.

Lungs.—A small deposit on the posterior aspect of the *left*, near the middle. An old pleuritic adhesion near base of *right*, in front. A few others at various points, very slight. Lung tissue crepitant throughout. Some liquid in right pleura.

The heart was hypertrophied on the left side.

The pericardium at one point had an old adhesion to the heart, say $\frac{1}{2}$ in. broad and not very thick. But little fluid was found, and no evidence of recent pericarditis. It had also two diverticula of small size.

The endocardium of the left ventricle was the seat of disease, and especially over the mitral and aortic valves.

The endocardium on the intra-ventricular septum was clouded and thickened over, say the one-third of the septum, near the base of the ventricle.

The mitral valve had both its leaflets thickened, and its chordæ tendinæ thickened and shortened. On the anterior leaflet was a cauliflower or papillary outgrowth as large as a pea, very soft, fragile, and disintegrating.

The aortic valve had all its leaflets thickened, and on two of them were similar papillary outgrowths, one of which, we judged (but were not sure), had been continuous with that from the mitral leaflet, but was torn away in opening the ventricle without sufficient care. These growths also were very rapidly softening.

On examining the kidneys, each presented some eight or ten atrophied embolic patches. Some of them were quite old apparently, the atrophic and fatty changes having proceeded so far as to produce very deep depressions on the exterior, and marked yellow discoloration, especially on section. A few were more recent, but none I judged of *very* recent occurrence. The cortical substance was somewhat diminished in its relative proportion in each kidney, though not to an extreme degree.

Microscopical appearances.—The epithelial lining of the uriniferous tubules swollen, and the nuclei often hidden by the extensive granular infiltration of the individual cells. There were also points of well-marked fatty infiltration. There was also unmistakable swelling and increase in the thickness of the *tunicæ propriae* of the tubules.

A well marked case of “cloudy swelling,” so often met with in septic and other acute blood infections.

The spleen presented a half-dozen similar embolic patches, with similar variations as to age.

The liver slightly fatty, some points of congestion.

The uterus small, soft, not perceptibly abnormal.

The right ovary atrophied, a small fibroma in its neighborhood.

The brain we were not allowed to examine, but judge that the sudden death was due (as also, I think probable, the previous paralysis) to sudden cerebral embolism. Possibly it was from failure of the heart, which was working at such a disadvantage, with the aortic valve especially in such a diseased condition.

DR. J. L. LUDLOW related the history of a case of hysteria which at various times presented the symptoms of gastritis, pneumonia, and other acute inflammatory diseases which had no real existence in the patient. She was a brunette, well developed, and very nervous and high-strung. She suffered from catalepsy, neuralgia, and dysmenorrhea, and feigned the power of living without eating. A

consultation was held, and a diagnosis of neurasthenia was made. No examination of the genital organs was allowed. The peculiar treatment by rest, shampooing, etc., was commenced, but after a short time a typhoid condition was developed, which greatly alarmed the doctor, who feared his patient was really in a dying condition. She was now allowed to procure food by stealth; stimulants were used, and she was nursed again into her original condition.

A specular examination was now demanded by the doctor. He found the uterus engorged, the cervix globular, and a profuse, bloody, purulent leucorrhea issuing from the os. Local treatment was now resorted to, and as the sexual organs returned to their natural condition, the abnormal physical and psychical manifestations ceased, and the patient was finally restored to perfect health.

DR. PACKARD did not wish to be understood as implying that there was no hysterical element in the case he had read; but he thought it should be a warning not to promise a certain recovery, and to deny the idea of danger, even in cases that were considered to be purely hysterical. In the case of Miss W., he had examined the heart and had heard no sounds that could not be caused by the marked anemia which existed. He felt convinced that the attacks of pain which were considered neuralgiac, and which were accompanied by transient loss of power, were really caused by emboli, which lodged in the vessels supplying the parts affected. He was not alone in considering these attacks to be purely hysterical in their character. Three other members of this Society had seen the patient on different occasions, and they had agreed with him in his diagnosis. The idea of mortal danger had been entertained by neither.

DR. E. L. DUER had seen this patient, he had examined the heart and had heard abnormal sounds, but they were slight, and were considered by him to be the result of the marked anemia which existed.

DR. W. S. STEWART considered that an irregularity of the heart's action during the paroxysm indicated some deep-seated trouble, for, as we constantly see, the most violent convulsions, if purely hysterical, will not affect the rate or character of the pulse.

DR. PACKARD did not agree with Dr. Stewart, for in an anemic nervous person any disturbance, however slight, will accelerate the heart's action or change its rhythm. He had observed the slamming of a door to cause a quickening of twenty beats in a minute.

DR. R. G. CURTIN had seen a number of cases of hysteria, in some of which the heart was easily excited, and in others very slightly, if at all.

DR. LUDLOW had observed the same thing. He did not think the cause of hysteria was at all understood, some of the worst cases he had ever seen had been in men.

DR. STEWART repeated his previous remark, that cases of hysteria, accompanied by disturbed heart-action, are always to be considered grave, and are to be watched for dangerous developments.

DR. A. H. SMITH had seen a number of cases of young girls, the subjects of ovaritis or uterine irritation, in which no permanent relief or cure could be obtained; they were untractable to all forms of treatment. The disordered action of the heart in these cases seemed at first to be entirely functional, but organic disease was afterward developed.

Stated Meeting, March 6th, 1879.

The Vice-President, EDWARD L. DUER, M.D., in the Chair.

DR. R. G. CURTIN related the history of an

ABDOMINAL TUMOR IN A MAN, SIMULATING OVARIAN CYST.

Dullness on percussion was most marked just above the pubes, and shaded off upwards, ceasing entirely at the umbilicus. This dullness corresponded with the enlargement of the abdomen. Fluctuation was of the same character as would be found in a mono-cystic ovarian tumor. The tumor was quite tender to pressure. The patient was emaciated. There was no thoracic trouble.

The first impression conveyed by the position and character of the tumor was that of a distended bladder, but that organ was found to be empty when the catheter was introduced.

After taking into consideration all the symptoms of the case, the doctor came to the conclusion that it was an encysted effusion, the result of peritonitis.

DR. A. H. SMITH had had recently an opportunity of examining a case of

OBSCURER ABDOMINAL ENLARGEMENT.

The patient had applied for entrance into the Woman's Hospital for the removal of a large abdominal tumor. A surgeon had given her a written certificate that the tumor was an ovarian cyst. (This certificate had been given to relieve the woman from some arduous duties.) The abdomen was considerably enlarged, more so on the left than on the right side, and there was a peculiar sense of resistance on palpation that communicated an idea of solidity in the tumor. In consequence of extreme sensitiveness of the vulva and vagina, an anesthetic was given for the purpose of facilitating a thorough examination for the verification of the surgeon's diagnosis. To the surprise of all present, as anesthesia was produced, the tumor entirely disappeared. The ovaries could be felt per vaginam, and were both found to be normal in size.

DR. M. O'HARA had seen in consultation a very puzzling case of abdominal tumor, in a patient who had been under treatment for lead poisoning. The diagnosis agreed upon was abscess of the

liver, and an encysted peritoneal effusion. Unfortunately no autopsy was allowed after the patient's death.

DR. W. H. PARISH had seen a patient in whom the existence of an obscure abdominal tumor had been observed. From its position and characteristics it had been considered a pediculated uterine fibroid. An attack of peritonitis occurred, and was followed by great effusion. The patient was tapped. She afterwards died from pulmonary trouble. At the autopsy the tumor was found to be a misplaced spleen.

DR. GITHENS made some remarks upon

THE EFFECT OF MORPHIA WITH ATROPIA ON THE DURATION OF
LABOR AT FULL TERM.

One of his earliest obstetric cases, after commencing private practice, was a primipara who had married late in life. Labor came on at term. He found her suffering from severe and frequent pains that were, however, without apparent effect upon the os uteri.

The mouth of the womb was thick and soft, but had not commenced to dilate. He remained with her some time, but as no progress was made, left and called again in a few hours; the parts were precisely as they had been at his first visit. This condition was new to him. There was here no rigid os, for which he had been taught to use belladonna. The patient was not neuralgic. There could certainly be no immediate danger to either mother or child, as the bag of waters was entire, so he did not feel called upon to interfere. For six days no progress was made, although the pains had been regular and severe. He concluded that Nature was unable to bring the case to a termination, so dilated the os with his fingers to a diameter of about one and a half inches, ruptured the bag of waters, applied the forceps and, using them as uterine dilators, delivered a fine child.

There were no bad consequences to either mother or infant from the long waiting, or from the final interference.

Mrs. C. was taken in labor at the termination of her sixth pregnancy, on Saturday, November 9th, but the doctor was not sent for until forty-eight hours had elapsed. On examination, he found the os entirely closed and somewhat pouting, the lips thick and soft. The pains were of the same character as those of the past two days; they had no effect whatever on the portion of the uterus that could be reached by the finger.

He ordered sulphate of morphia $\frac{1}{8}$ of a grain, with sulphate of atropia $\frac{1}{60}$ of grain in solution, to be given every hour, and then left her. Four hours later, after four doses had been taken, he was again called, and found the os uteri fully dilated; he ruptured the

bag of waters. The pains were quick and efficient, the head descended rapidly, and the child was soon delivered.

In answer to his questions as to the effect of the medicine upon the pains, he was told that each dose seemed to increase them, both as to intensity and duration.

These two cases were of the same character, and were presented to illustrate the surprising effect of an opiate upon the uterine contractions and pains. When the doctor first prescribed morphia in this class of cases, it was with the idea of securing sleep, and relief from what was apparently useless suffering. The real effect, that of expediting labor, was a great surprise, and it was not until repeated trials had proved the fact, that he ceased to regard it as mere coincidence and acknowledged it to be cause and effect.

Dr. Walter R. Gillette¹ tried a number of experiments to ascertain the effect upon the fetus of morphia used hypodermically in sufficient quantity to produce full narcosis in the mother during labor; from twelve to thirty-six minims of Magendie's solution being used in each case. He makes no remark respecting its effect upon the character of the pains or the duration of the labor; but in Case IV., a fifth pregnancy, the second stage occupied but twenty minutes; Case V., primipara, second stage, twenty minutes; Case X., third pregnancy, second stage, twenty-five minutes. These instances are enough to prove that morphia, even to complete narcosis, did not retard the progress of the labor.

At a meeting of this Society, held March 1st, 1877, Dr. Jos. V. Kelly,² while speaking of the effects of morphia on rigid os uteri, remarked that he had not found it had any effect in quieting the pains, but, on the contrary, it increased their efficiency and removed the rigidity. During the course of his remarks he said that he would not leave a patient after giving an opiate, as the progress of the labor then became more rapid.

Dr. Ellwood Wilson, in a case of so-called tubal fetation, read at the Dec., '78, meeting, reports the use of $\frac{1}{3}$ of a grain of morphia hypodermically to relieve pain. The fetus passed into and through the uterus and was delivered spontaneously a few hours afterward.

Dr. JAS. V. KELLY remembered the remarks alluded to by Dr. Githens, and still held the opinion, expressed at that time, as regards the effect of an opiate in labor at full term in relieving rigidity and expediting labor; but if the labor pains be premature, they may be stopped altogether by the use of an opiate.

Dr. A. H. SMITH had never used morphia with atropia, but had frequent resort to opium in the early stages of labor, to stop wan-

¹ See *AMER. JOUR. OF OBSTETRICS*, Vol. X., 1877, pages 319-325 and 612-623.

² *AMER. JOUR. OF OBSTETRICS*, Vol. X., 1877, page 477.

dering inefficient pains, particularly if during these pains the mouth of the uterus presents a thin, paper-like edge. The opiate would not control the pains of true labor, unless given to complete narcosis. In cases of intense pains causing spasmodic contractions of the entire uterus and thus retarding the progress of the labor, opium suppositories will aid by removing this condition, and allowing the labor to go on naturally. He considered opium the only reliable agent for controlling irregular uterine pains during pregnancy.

DR. PARISH inquired the sense of the Society as to the effect of an opiate given immediately after labor.

DR. WM. B. ATKINSON had for twenty-five years used morphia in positive doses to quiet after-pains, and had never seen bad effects to either mother or child. He now preferred chloral for the same purpose.

DR. O'HARA had employed suppositories of opium and belladonna to accomplish the indication pointed out by Drs. Githens and Smith. He would not use opium in every case, simply because it was a case of labor, but should have no hesitation to use it either during or after labor, if it was required by the exigencies of the case.

DR. SMITH would employ opium in any case that was liable to shock, to put the nervous system in splints. He had had frequent occasion to use it after labor, and in one case only was it open even to a suspicion of causing post-partum hemorrhage. In this instance an idiosyncrasy existed of which the doctor was ignorant. Opium even in very small doses caused extreme relaxation of the muscular system, and its use in this instance was followed by post-partum hemorrhage; but the doctor did not think the medicine was the cause, as two previous labors in the same patient had also been followed by alarming loss of blood. He made it a universal rule to give opium after post-partum hemorrhage, to prevent or relieve nervous shock.

DR. GITHENS called attention to the introduction of his remarks, confining them to the effects of the opiate in labor at full term. There was no question in the mind of any one, that when used in threatened miscarriage, or any other untimely uterine pains, the remedy would quiet the pains, and in many cases prevent the loss of the fetus. The remarkable fact remains that the same remedy, given in labor at term, even to full narcosis, as proved by Dr. Gillette's cases, does not stop the uterine contractions, but in fact seemed to increase their effect, and to promote the expulsion of the child by removing opposing conditions.

Concerning the use of opium after labor, he had no hesitation in giving it freely for the relief of after-pains. He had been called in to one case of post-partum hemorrhage in a Nurse's-Home patient. In this case he considered opium needed for the condition of the nervous system, and he gave it in sufficient doses to have a decided effect. The hemorrhage ceased and did not again recur.

DR. KELLY would be afraid to give opium in a case of post-partum hemorrhage, but would employ stimulants, ergot, and quinia.

DR. SMITH did not think any one would depend upon opium, but would use it as an auxiliary to other remedies. Hemorrhage is followed by an uncontrollable restlessness, in which the patient cannot lie still, but persists in raising her head, and there is consequent danger of heart-clot; opium quiets this condition, and brings rest and sleep to the exhausted patient, while it does not have any effect in causing relaxation of the uterus.

DR. GITHENS remarked that he had not depended upon opium in the case he had mentioned, he had used it in connection with other remedies, intended to secure contraction of the uterus, and check the flow of blood. There, however, was no danger in employing opium freely in such cases, and it should be given if there were any symptoms demanding its exhibition.

DR. DUER had seen a large number of cases of post-partum hemorrhage. He considered that it was the general rule of members of this Society to use opium in such cases, and for his own part he was always pleased when he observed a decided effect from the remedy.

DR. PARISH would employ it as a heart sedative, and in cases of nervous agitation as described by Dr. Smith, he would give small doses in connection with other remedies.

Stated Meeting, April 3d, 1879.

The President, DR. LEWIS D. HARLOW, in the Chair.

DR. ALBERT H. SMITH exhibited for Dr. Anna E. Broomall a specimen of

CONGENITAL DIAPHRAGMATIC HERNIA,

and read extracts from a paper written by Dr. Broomall.¹

DR. JOHN H. PACKARD related the histories of several cases of

DIPHThERIA APPARENTLY CAUSED BY EXPOSURE TO THE POISON OF
SCARLATINA.

A young dairyman, who had been amusing children convalescent from scarlet fever, and who had not been exposed to any other source of disease, was attacked by genuine, fully pronounced diphtheria, which he in turn communicated to his barber.

In another instance a child had scarlet fever, she was nursed assiduously by her father; ten days later he had a violent attack of diphtheria, with marked but not extreme prostration. The mother had been confined recently, her nurse was transferred to take care of the child. She, two grandparents, and two servants had sore throat, with characteristic but not severe prostration. The child was convalescing nicely, until during the third week the doctor con-

¹ See ORIGINAL COMMUNICATIONS, page 537.

sidered it necessary to apply a solution of nitrate of silver to the pharynx. The next day the throat was much worse, chloride of iron was applied, but afforded no relief. The breathing became stridulous. Dr. J. H. Hutchinson was called in consultation, respiration was labored and difficult, during inspiration there was recession of the interclavicular notch, costal spaces, and lower part of the thorax. Tracheotomy was performed and gave relief, but death occurred fifty-two hours after the operation. The child was able to sit up and drink water a short time before her death.

This child had a well marked attack of scarlatina, and was not markedly prostrated. She communicated diphtheria to her attendants, while showing no evidences of it herself. The poison of diphtheria may have been in abeyance in the child, and was possibly the cause of the secretion which occluded the respiratory passages and caused death. Yet the case appeared to be a typical one of pure scarlatina. During his attendance upon the case, the doctor suffered from congestion of the throat and malaise.

DR. M. O'HARA asked if the diagnosis of the original case might not have been open to question. Diphtheria is sometimes accompanied by a rash. He also inquired if there had been any local paralysis in either of the cases of diphtheria, and whether the primary attack of scarlatina in the child was continuous with the local condition causing death.

DR. PACKARD replied that there could be no question about the genuineness of the attack of scarlatina, in the primary case. The other patients were under observation and active intelligent medical treatment from their inception, and their development was modified. The father, whose local disease was best marked, was a very large and powerful man, and, although much weakened, could not be considered as extremely prostrated. There was no decided paralysis in either of the cases, although liquid food taken into the mouth would sometimes find its way into the nose.

DR. J. V. KELLY had been recently in attendance upon a well-marked case of scarlatina; the nurse had pharyngeal diphtheria developed a week subsequently.

DR. R. G. CURTIN thought the scarlatinous sore throat might have a diphtheritic deposit, a local condition without the constitutional symptoms of true diphtheria.

ENUCLEATION OF A LARGE UTERINE FIBROID TUMOR.

DR. W. GOODELL exhibited a tumor which weighed twenty ounces, and related the history of its successful removal.

He had been called in by a friend to see a poor hard-working woman who had been suffering originally from menorrhagia and recently from a constant loss of blood. She had been confined to her bed three weeks on account of the bleeding. Examination re-

vealed a large interstitial fibroid which occupied the whole fundus and posterior wall of the womb and most of the anterior wall. The fundus of the uterus reached above the umbilicus and its cavity was nearly obliterated. The posterior lip of the uterus had almost entirely disappeared, and the tumor bulged somewhat below the line of the anterior lip.

Everything in the way of internal remedies, such as ergot, gallic acid, etc., had been faithfully tried without effect, and he had therefore recommended her to enter the University Hospital for surgical relief.

Operation.—After splitting the anterior and posterior lips with scissors, Adams' subcutaneous saw was used to divide the uterine tissue which formed the capsule of the tumor. It was as thick as the rind of a large orange, yet the saw caused very little bleeding, less than either knife or scissors would have caused.

As soon as the tumor was reached, Dr. Goodell passed in his finger and commenced to break up the adhesions between the tumor and its uterine envelope. A volsellum was inserted into the tumor and strong traction was maintained by Drs. Salin, of Stockholm, and Baer, so that the tumor descended as the adhesions were broken.

Since the tumor lay within the uterine wall, the finger was not once passed into the uterine cavity. As the tumor passed into the vagina, it became necessary to replace the finger by an instrument, and the serrated spoon of Dr. T. G. Thomas was used. No difficulty was experienced until it became necessary to detach the upper portion of the tumor, when it was found impossible to reach the adhesions, by this straight and rigid instrument, over the equator of the tumor. Resort was therefore had to the embryotomy crotchet, by means of which the upper portion of the tumor was hooked, and it was turned completely out of its bed. The hemorrhage throughout was slight.

After the removal of the tumor, another body was discovered at the fundus of the uterus. In consequence of the extremely flaccid condition of the organ it was difficult to diagnose this body, but it was considered to be a small subperitoneal fibroid, and was allowed to remain. A dilute solution of the subsulphate of iron was injected into the uterus, and no tampon or other application was used.

The cut surfaces united rapidly, and the patient was out of bed before two weeks had passed, and out of the house twenty days after the operation.

In a future operation on a similar case, he would use a strong steel loop to pry the adhesions asunder, and some flexible instrument with a serrated edge, which could follow the curve of the tumor.

DR. A. H. SMITH congratulated Dr. Goodell on his success. He thought that the loop suggested by the doctor would be much safer than the serrated spoon devised by Dr. T. G. Thomas. Too great care cannot be used in this class of cases, as perforation of the uterus is imminent, and has been a frequent cause of death.

Dr. Smith did not fully understand the basis of the fine diagnosis made by Dr. Goodell, between submucoid and intramural uterine tumors. He had always considered prolonged hemorrhage a diagnostic mark of submucoid polypoid growths.

DR. W. H. PARISH inquired about the thickness of the uterine wall remaining after the operation.

DR. GOODELL replied that it was so thin that he was really frightened when he found how close to the peritoneum he had gone. His reasons for considering the tumor mural were, the complete absence of any uterine cavity; the alarming thinness of the uterine wall next to the peritoneum, and the thick capsule of uterine tissue over the presenting portion of the tumor, fully as thick as the rind of a large orange.

He did not think the lines of distinction between the three classes of uterine tumor, subperitoneal, mural, and submucoid, were in general well marked, but in this case they were.

DR. PARISH remarked that the thinness of the remaining wall showed how close the operator might go to the peritoneum without bad effect. He had within a few weeks received a well authenticated account of an operation lately performed by Dr. Herff, of San Antonio, Texas, for the removal of a cancerous uterus. He had succeeded in enucleating the entire organ from its peritoneal covering, leaving only small portions at the Fallopian tubes. There was free hemorrhage. The patient recovered from the effects of the operation, though subsequently cancerous formations appeared in adjacent structures.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Reported by C. O. WRIGHT, M.D., Secretary.

Stated meeting, February 13th, 1879.

The President, DR. J. W. UNDERHILL, in the Chair.

DR. PALMER reported a case of

DYSTOCIA FROM FIBROID TUMOR OF THE UTERUS.

"A German woman, æt. 37, multipara, had been in severe labor all day and evening in the hands of a midwife. Was called in consultation by another physician about 10 P.M. She was then greatly

exhausted, with frequent pulse, difficult breathing, partly from pregnancy, partly from the pressure of an immense goitre, measuring across 6 in., from above to below 4 in., and fully 3 in. thick; seemingly fibrocystic in its character.

An examination detected a protruding left hand at the vulva (dorso-anterior position of left shoulder), and decided descent of the shoulder within the pelvic cavity, together with a prolapse of a pulseless umbilical cord. There was an abundant flow of blood and mucus from the uterus, of that peculiar color and odor so aptly referred to by Ramsbotham, significant of maternal exhaustion. The abdomen was irregular and unusually large, especially in view of the fact that she was only in the eighth month of pregnancy, according to her estimate. Twin pregnancy was suspected.

Podalic version was attempted, first with the patient on her back. It was impossible to reach the feet with either hand; the pelvic brim was so occupied with the presenting shoulder, the uterus so tetanic, and on account of a great obstruction encountered posteriorly above the pelvic brim. The position was then changed to knee elbow, and the immense anteverted uterus with contents lifted up and supported, while with the left hand I finally seized the left foot of the child, brought it down to the vulva; afterwards the right foot. Considerable time was required in this, and much difficulty, for reasons stated. It required changing of hands, soon made numb and helpless. I have never experienced in any instance one-half such difficulty. Firm traction on the feet now failed to cause any descent of the child, nor did the left hand ascend any. For a time, it appeared that the difficulty might be owing to the presence of twins and their interlocking. This suspicion was strengthened by the immense size of the uterus and its peculiar contour. Again lifting up the uterus from without, while patient was still on the back, delivery was now slowly accomplished. The uterus, emptied of the fetus, was fully as large as at ordinary seven months' gestation and irregular in shape. Introduction of the hand to explore the uterine cavity found nothing within save the placenta, which was delivered; but the cause of the whole difficulty was at once clear, viz., a fibroid of the posterior uterine wall, extending down to and involving the cervix. The cavity of the uterus was, of course, very irregular. A full dose of ergot given. Bandages. No post-partum hemorrhage. Within the hour we remained at her bedside she rallied somewhat.

I did not follow up the treatment, but understood from the attending physician that she was kept under opium, quinia, and concentrated nourishment, while the vagina was thoroughly washed

out several times per day. The temperature at no time during the five days she lived, save within the few hours prior to death, exceeded $102\frac{1}{4}^{\circ}$.

During most of this time it barely exceeded the normal. She sank largely from exhaustion, together with the dyspnea occasioned by the heavy goitre.

A post-mortem, some forty hours after death, showed no signs of peritonitis.

The tumor, situated in the posterior wall, was of the submucous variety, and was without difficulty enucleated from its bed in the surrounding uterine wall. Weight 10 pounds, and measured 8 in., 7 in., and 6 in. in various diameters.

It was impossible to get any reliable history of the length of time this tumor had existed. No definite history of uterine hemorrhage. She was said to have had an enlarged abdomen before this pregnancy, but whether from the fibroid or a pendulous belly so common among German women is not certain. Her last labor before was twenty months ago. This was the fifth, and she had always been attended by a midwife.

It is probable, had the woman survived the shock and exhaustion of this labor, that the tumor itself would have diminished greatly in size, from fatty degeneration and emptying of blood. In fact, it with the uterus had diminished fifty per cent from the hour of delivery to time of death (five days).

Whatever tumor had remained a few months after delivery would have afforded clear indications for the ergotine treatment, with a view to transforming it into an intrauterine growth. This process of enucleation might have been also much facilitated by a free and deep incision of the mucous covering and enveloping capsule.

Had this woman been attended by a physician at the beginning, and labor been promptly terminated, the result probably would have been different."

DR. REAMY reported

THREE CASES OF PELVIC HEMATOCELE.

"An experience of twenty-five years has brought under my charge but eight cases of peri-uterine hematocele. At least I may say but eight cases in which the diagnosis was unequivocal. This report presents but three of the cases, and those only in merest outline, so as to bring the subject before the Society for discussion.

CASE I.—M. T., age twenty-five, married, entered my private hospital in December, 1874. She had been married five years, was sterile, a source of great disappointment both to herself and husband

My advice was sought, hoping that the cause of her unfruitfulness might be discovered and perchance removed. She had menstruated regularly and with but little pain from the age of fifteen until about a year prior to marriage, after which time menstruation had been irregular and often painful.

I found the cervix slightly anteflexed, somewhat elongated; the os small, the cervical canal admitting a small uterine probe with difficulty.

The patient was ordered laxative medicine and to have vaginal injections of warm water daily for a few days.

Having decided to dilate the cervix, and the introduction of even a small-sized sea-tangle tent being difficult, I used with facility small slippery-elm bark tents after the manner of Prof. Byford, of Chicago. After the use of four or five of these, I succeeded with but little difficulty in the introduction of a medium-sized sea-tangle tent.

This was introduced at bed-time and removed the following morning. But very little pain was experienced, no abdominal tenderness, no elevation of pulse or temperature at the time of its removal. Absolute rest was enjoined for a day and following night, but contrary to this advice, on the afternoon of the same day the patient rode twenty squares in the street cars.

An hour after her return to the hospital, she was attacked suddenly with intense pelvic pain, which was soon followed by nausea, faintness, and vomiting. When I saw the patient, an hour after the onset of the pain, she having been in the mean time in charge of an assistant, the nervous shock was profound, the countenance blanched, pulse 120°, feeble, temperature 100°.

The suddenness of the attack, violence of the pain, and alarming character of the prostration, led me at once to suspect hematocele, which conclusion was pointed to by the history, clinical and otherwise, which had immediately preceded the attack.

A vaginal examination revealed no tumor or perceptible bulging in the post-vaginal vault, nor was there any abdominal enlargement.

The pain and shock continued to an alarming extent. One-eighth of a grain of morphia was injected hypodermically, whiskey administered freely, cloths wrung out of ice-water applied over the abdomen, absolute rest in the recumbent posture enforced.

The pain not abating, with no material change in other symptoms, an additional eighth of morphia was injected in thirty minutes, which was again repeated at the expiration of an hour, resulting in almost complete relief from pain.

At the expiration of five hours, all of which time I remained by the bedside of the patient, with my assistants (Dr. E. H. Jackson,

now of Lancaster, Ohio, and Dr. G. S. Mitchell, my present associate in business), we could detect fulness in the lower abdomen as if from the presence of fluid, bulging could clearly be detected per vaginam into the posterior cul-de-sac. Indeed, the vault of the vagina was carried downward prominently, the tumor giving unquestioned fluctuation. There could now be no possible doubt as to diagnosis.

The flow of blood must have been rapid, for, by the following morning, the tumor not only occluded the vagina, pushing the uterus forward hard against the pubis, but ascended to the umbilicus. It was the largest of the kind I have ever witnessed. Indeed, I thought then and think now, that the patient was very near unto death from the quantity of blood lost; the peril, of course, being increased by the shock and irritation from so large an accumulation in an unaccustomed situation.

No additional digital examination was made for four days. The diagnosis was sufficiently clear, and I did not deem frequent examinations harmless.

When examination was again made, the uterus was crowded forward against the pubis, the os higher up than usual.

The pulse and temperature both receded somewhat during the four days here named. The general condition of the patient quite improved. The treatment consisted of rest in the recumbent posture, opiates, fluid food, etc. On two or three occasions during the following week the temperature rose to 105°, the pulse to 130, leading me to fear local septicemia. Twenty grains of quinia were allowed twice daily during this high range of pulse and temperature.

Subsequent history: On the twelfth day after the accident, the sac ruptured and discharged its contents through the rectum. At least two quarts of bloody, slightly purulent, partly dissolved and clotted matter escaped at the first discharge. There were several specimens of clotted blood which had not completely undergone decomposition. At the end of four weeks the discharge had completely ceased, and the tumor had entirely disappeared, the opening in the rectum closed. The patient was discharged at the end of the twelfth week apparently as well as ever. The uterus, however, somewhat, though not completely immobile. There was no abdominal nor pelvic tenderness. At the end of six months the uterus was freely movable. The course of cervical dilatation, before contemplated, was now accomplished without an untoward symptom. The patient remains in excellent health, has gained much in weight, menstruates regularly without pain, but is still unfruitful.

Points of interest. 1st. Causes of the accident. Dilatation of the uterine cervix, followed by exercise that had been forbidden.

2d. Source of the hemorrhage. Probably from the pampiniform plexus of vessels under the Fallopian tubes. Or possibly from vessels about the vaginal junction. If from the latter source, it would be interesting to consider whether, when the tumor became so large, it was allowed to do so by the pushing up of the floor of Douglas' pouch, or, whether at a comparatively early period rupture occurred, and the peritoneal cavity was ultimately protected by the formation of a provisional membrane. I incline to this belief from the progress of the symptoms.

3d. The large quantity of blood lost, and the rapidity with which it was poured out.

4th. The early period at which the tumor crowded the uterus against the pubic symphysis, viz., while the blood was still flowing, before it had time to coagulate firmly.

5th. The mode (natural) of relief in this case; the rapidity and completeness of the recovery, including mobility of the uterus, after there had no doubt been some cellulitis.

6th. The clinical suggestions as to treatment. Was cold to the abdomen best? And would surgical evacuation of the fluid through the vagina at an early period have given the patient less risk? I believe, it would have given greater risk.

CASE II.—M. R., age twenty-eight, single, a blonde, consulted me in August, 1876. She was fairly nourished, of very nervous temperament. She had enjoyed good health, until within the past year menstruation had become very profuse and painful; indeed, her symptoms convinced me that she was suffering from uterine hemorrhage. She was not at all anemic. I suspected the cause of hemorrhage must be local, therefore.

An examination per vaginam was proposed, but declined. As I did not consider the symptoms immediately urgent, and always shrink from subjecting a virgin to such an ordeal except in emergencies, I did not press the matter. The abdomen, however, was palpated, revealing no increase in size or deviation in form from what I supposed to be normal. I ordered 30 gtt. of fluid extract of ergot to be given morning and noon, 10 grains of Dover's powder at bed-time. Promised to call upon the patient at her home the following day. Twelve hours after the first dose had been taken, six hours after the second, I was summoned in great haste to visit the patient. Found her pale, almost pulseless, anxious, nauseated, bathed in perspiration, suffering agonizing pain in the lower pelvic region. There had been no escape of blood since two hours after she had taken the first dose of ergot. The

symptoms were alarming to the utmost degree; the shock to the nervous system profound.

I at once suspected pelvic hematocle, and as the hemorrhage from the vagina had so suddenly and completely stopped, I further concluded that the blood had probably regurgitated through the Fallopian tubes into the peritoneal cavity. I am well aware that it is now claimed to have been over and over again demonstrated that blood cannot pass from the uterine cavity through the Fallopian tubes. I have no question but that in the normal condition it is impossible, but I am equally certain that I have witnessed several cases where fluid injected into the uterine cavity passed without rupture of either uterus or tubes into the peritoneal cavity through the Fallopian tubes. Of course, such a result implies a diseased or distended condition of the tubes. I cannot, therefore, agree to the dogmatic statement so often made of late, that the passage of fluid thus is impossible. I conclude it may be possible for blood, even from the uterine cavity, under favorable conditions, so to regurgitate. Of course, all know that by Bernutz, Trousseau, and others this was held to be the chief source of the blood in hematocle. This view, in this case, was strengthened and rendered probable, because the symptoms developed so rapidly after the exhibition of ergot, the action of which upon the uterus had been so marked and violent as to arrest completely the flow of blood per vaginam. Some of the blood may also have come from the mucous membrane of the tube.

I do not know the source of the hemorrhage, as fortunately, the patient recovering, no post-mortem was had. I am positive, however, that the action of the ergot bore important relations to it, probably directly caused it. Whatever its source, it formed in the peritoneal cavity. It may possibly have been from rupture of some of the ovarian bulb-vessels, weakened in association with pre-existing disease, and temporarily distended to a fatal degree by the sudden arrest of circulation in the uterus. Notwithstanding, this would be by no means the point where such an arrest would fall with most force. The patient was kept quiet, one-sixth of a grain of morphia hypodermically, iced cloths to the abdomen, etc. On the following day an examination revealed a boggy tumor behind the uterus, pushing down from Douglas' cul-de-sac. It reached also above the uterine fundus.

The pain was of marked and distressing, bearing-down character.

The faintness and prostration continued for two days with but little relief. Pulse 110° to 120° F., feeble.

Temperature never rose at any time above 100° F.

The vomiting was exceedingly troublesome and continued at intervals of half-hour to two hours for another week.

On the sixth day I could estimate the tumor about as large as a goose egg, occupying Douglas' fossa.

Aside from the tumor, the uterus was enlarged slightly.

This patient was confined to her bed for ten weeks, the tumor becoming harder and smaller; no rupture or escape of its contents occurred. At the end of five months it had entirely disappeared, and I could now discover a fibroid tumor of considerable size, interstitial variety, in the posterior uterine wall. The sound passed into the uterus three inches.

The cause of the original hemorrhage for which the ergot was prescribed was now manifest. Menstruation was still at times profuse, irregular, and always extremely painful.

During the past year I have employed with this patient deep hypodermic injections of ergot twice per week for four or five weeks, then omitting a few weeks, then resuming the remedy again.

The uterine tumor has reduced at least one-half its size, being now not larger than a hen's egg.

Menstruation is regular or nearly so, accompanied by but little pain.

General health of the patient very fair.

Points of interest. 1st. Cause of the hemorrhage forming the blood-tumor, viz., uterine contraction induced by the ergot. this feature having special interest in view of the shortness of time elapsing. Ergot seldom acts in this way except upon the parturient uterus.

2d. The rapidity with which the tumor formed as in case first.

3d. The completeness and rapidity of removal of the clot without rupture of the sac; its removal being so complete that no trace of it could be found, and this occurring after changes in its elements, which had rendered it very solid, so much so as to render its absorption improbable.

4th. The happy and permanent results of ergot upon the uterine fibroid in this case.

5th. May not the violent action of the ergot primarily manifested be regarded as a favorable indication as to its curative effect upon the uterine fibroid, which was subsequently secured?

CASE III.—Mrs. G., age 36, widow, mother of two children, youngest of which nine years old. Had been a widow five years. Past two years had been the mistress of a man who supported her. Had had two abortions criminally procured within this time, the last six months prior to the present attack.

I was summoned to visit her in June, '76. She had been suffering, as I was informed, from menorrhagia for some time.

Had been treated by ergot, iron, etc. During the past week, under the advice of her physician, had been injecting the vagina three or four times daily with hot water. I was summoned to see her at night, an injection lasting ten minutes had been made four or five hours prior to my visit. Condition on my arrival, countenance exceedingly pallid, intense pelvic pain with bearing-down sensation. Temperature, 99; pulse, 130, feeble.

Examination per vaginam showed the uterus to be considerably retroverted, exceedingly tender to touch; vagina hot; posterior fornix vaginae pushed strongly downwards, decidedly fluctuating, the right and left lateral culs-de-sac partly obliterated by bulging downward, firm, unfluctuating. Bimanual palpation showed considerable deposits in these regions, with tenderness. These deposits or accumulations appeared to correspond to the triangular spaces, respectively formed by the broad ligaments, bladder, and pelvic walls. I was not able positively to determine, but believed this accumulation to be in the cellular tissue beneath the peritoneum, and of course regarded it as not recent. The tumor in Douglas' pouch, which seemed to be increasing in size, was believed to be hemocele. Patient was ordered morphia hypodermically, cold wet cloths to the abdomen, absolute rest.

My assistant, Dr. E. H. Jackson, remained with the patient several hours.

The morphia had to be repeated, at intervals of an hour, the fourth ($\frac{1}{6}$) before relief from pain was secured.

The following day the posterior tumor seemed larger, filling apparently the sacral concavity, pressing firmly upon the anterior rectal wall, rather less fluctuating. This patient was in a critical condition for ten days. On the afternoon of the tenth day, the pulse being 120, feeble, temperature 104, the tumor having softened and bulged downward, obscuring the uterus and filling the upper portion of the vagina, I punctured it freely with a bistoury, discharging at least $1\frac{1}{2}$ pints of grumous blood and pus, the latter element constituting, I should think, one-sixth of the discharge. The cavity was washed out with a solution of carbolic acid, one drachm to a pint of water. In three hours the temperature was 99, pulse 101. More or less discharge continued for two weeks, the temperature and pulse varying from time to time from the norm, to a 103 for the former, 120 the latter.

The patient was discharged at the end of twelve weeks in good health; immobility of the uterus to a limited extent remaining.

Points of interest. 1st. The conjunction in this case of hematocele with existing pelvic cellulitis.

2d. The clinical proof of the propriety of opening the sac and discharging its contents in certain cases, as in this one, after the lapse of proper time. Corollary, the immediate improvement of symptoms following antiseptic injections."

DR. PALMER remarked that, while it is very interesting and important, if possible, to determine the actual lesion which is at the cause of the accumulation of blood within the pelvis, it is often quite beyond our diagnostic means to do so. It is the effect which, for the time being at least, we are to contend with, and not the cause. The fine distinction which some authorities, as Aran, Bernutz, and Schroeder have made, by excluding under the term pelvic hematocele those cases wherein the effusion has taken place beneath the peritoneum, is hardly warranted by the facts. True, while the seat is somewhat different, the cause and source may be the same, the management is in the main the same, and in both instances the hemorrhage is pelvic.

Moreover, cases have occurred, at first sub-peritoneal, in which a rupture of the peritoneum has followed. The converse is more frequent. Thus, as Thomas remarks, the theoretical barrier erected by pathologists has been broken down.

He had witnessed a fatal case of the sub-peritoneal variety, the exciting cause being a severe fall on the buttocks, occasioning a rupture of the vaginal veins, already varicose. An immense tumor formed between the vagina and rectum, which subsequently ruptured into the former with profuse hemorrhage. A post-mortem revealed immensely enlarged spleen and liver, doubtless the cause of the pelvic stasis.

If experience has taught anything in the management of pelvic hematocele, it is that, beyond efforts to control the hemorrhage and subsequent inflammation, the case is largely to be left to Nature. She is competent, under seeming very adverse circumstances, to dispose of large accumulations of blood, if perturbing agents are withheld, and no efforts taken to evacuate the tumor by puncturing. The supervention of septicemia entirely changes this rule. Then evacuation and cleansing of cavity were necessary.

Bloody accumulations of the sub-peritoneal variety, more frequently required surgical interference, and fortunately such interference was attended with less risk.

Stated Meeting, March 13th, 1879.

The President, DR. J. W. UNDERHILL, in the Chair.

DR. E. B. STEVENS read a paper entitled

"UTERINE FIBROID SUCCESSFULLY TREATED BY ERGOT,"

of which the following is an abstract.

July 26th, 1878.—Called to see Mrs. H., from whom I received

the following history: 38 years old, has been married twenty years, was never pregnant, began to menstruate at about fourteen years of age, has always suffered with dysmenorrhea. Has been an invalid for ten or twelve years, during most of which time has been regarded as a subject of "womb disease," but without any definite form ascribed, or at least the patient appears to have received no definite idea of the nature of the case; supposes there is some displacement, and states that retroversion had been diagnosed by one attendant, "displacement with adhesions" by others, for she has been in the hands of a great variety of physicians, regular and defective. Has had frequent uterine hemorrhages for at least six or eight years, one (the last) attack of flooding severe and protracted about five or six months ago, but has now had no catamenial show for three months.

Examination.—Find an abdominal tumor extending nearly to the umbilicus, and occupying all the space between the iliac bones and symphysis pubis. It is quite regular in shape, except a point on the left side, which is distinctly nodular; she has the appearance of being about seven months advanced in pregnancy; the mass is easily outlined by the finger-tips and edge of the hand. Supporting the tumor with one hand, a vaginal examination discovered a mass extending downward and occupying the vagina about the size of a large orange; this bimanual examination clearly makes out the abdominal tumor and vaginal mass to be continuous. The cervix is elongated and points slightly backward and to the left. The examination with the sound is not entirely satisfactory, because the introduction is accompanied with great sensitiveness, but the depth appears to be about four inches. (Subsequently the cervical canal was dilated with tents of elm-bark, but still the sound failed to pass in readily, apparently being opposed by some obstruction, but the elm-tent passed in at least five inches.) The diagnosis is a submucous fibroid tumor of the uterus.

[Patient states that she has noticed the tumor for about six months—perhaps about the time of last winter's attack of hemorrhage—not previously.]

The condition of the case was further complicated by the fact that she was exposed to malarious influences, as exhibited in frequent but irregular chills, anemia, and diarrhea. It appeared necessary, therefore, to institute treatment for the general health, quite as much as for the special trouble. She was accordingly placed upon quinia, iron, and the mineral acids. Gradually I deemed it prudent to commence the administration of the fluid ext. ergot, which was usually given either in combination with some preparation of iron

or in connection with it. The ergot was given by the stomach; it was not pushed very liberally as to doses, so that any special effect upon the uterine body was not observed for some time. Energetic contractions, with severe pain, were, however, secured in due time, and with this result there was soon observed a very gradual diminution of the size of the tumor. After some weeks, considerable shreddy material passed at times, apparently broken-down pieces of fibrous material. This process of contraction, uterine pain, and gradual diminution in size of the tumor proceeded in this irregular fashion, until

Nov. 20th-28th.—Uterine pain very severe at intervals, as in labor; some flooding with discharge of clots.

Dec. 6th.—Has passed a number of small lumps or masses of fleshy material from the uterus, the masses being larger and more distinctly fleshy than those discharged some time since; but a few days preceding this discharge,

Nov. 28th.—She was seized with a severe attack of acute rheumatism, which resisted treatment for perhaps ten to twelve days, and after the acute attack subsided, frequent seizures of rheumatic pain have occurred up to the present time.

March 1st, 1879.—At this date made a careful examination, scarcely a trace of the tumor remains; the fundus of the uterus is felt just below the level of the symphysis pubis; there is no uterine enlargement pressing down into the vagina. The condition of my patient in other respects is not satisfactory. Her strength, appetite, color, are all materially improved as compared with her condition some months ago, or, say, when this record begins. But she improves slowly; the rheumatic tendency continues, has frequent attacks of uterine pain, cough, with some indications of tuberculous condition in the left lung; pulse 120; catamenia have not returned. Still, while she does not resume a desired state of general health, the effect of the ergot treatment upon the uterine fibroid has been clear and complete."

In connection with this history of the case, Dr. Stevens commented briefly upon the etiology of fibrous tumors of the uterus, giving prominence to the theory of hyperemic states being intimately associated with the probability of a fibrous growth becoming developed.

The views of Prof. Byford, of Chicago, as to the nature and low extent of vitality of these growths, together with the physiological action of ergot upon their nutrition; it being quite clearly shown that fibroids diminish in size and tend to disappear under the influence of ergot, even without securing the disintegration and expul-

sion of the mass. The views of Leopold were also quoted, as given in the *Archiv für Gynäkologie*, confirming the experience and claims of Hildebrandt, and pointing out that interstitial growths were probably the class most certain to yield to this method of treatment.

Dr. Stevens had employed ergot in his case by the mouth, but noticed the fact that most reporters had preferred hypodermic injections.

Dr. TRUSU raised the etiological question, whether hyperemia was the initial cause or the sequence of fibroid. If the cause, iron was not called for. He thought 20 m of ergot to be a very small dose, and was in favor of larger doses, preferring its use hypodermically. Could not understand how intrauterine injections of ergot could do good, as they would pass away. Reported a case where he used it, but was obliged to discontinue its use, owing to the pain it created. Was only in favor of its administration by the mouth.

Dr. PALMER said he had seen abundant evidence in the administration of ergot in various ways for certain fibroids of the uterus to convince him of its great utility. The mode of administration mattered considerably, as well as the proper selection of the case. To his mind, there was no doubt that the hypodermic method secured the quickest and best results; the drug injected being either the fluid extract or any aqueous solution of ergotine. A number had testified to the fact that the addition of glycerine to the menstruum increases the liability to the formation of abscesses. The best seat is the region of the umbilicus; for it is one of comparative insensibility. The injection of ergotine is much less liable to create cellular inflammation and abscesses in the non-gravid than the gravid state. The explanation of this would appear to be the peculiar nerve and blood state of pregnant women. Again, the injection, to secure the best effect, should be as frequently performed as possible—daily, if the condition of the patient permitted.

Reference has been made to the recorded experiences and directions recommended by Leopold: that the tumor should be interstitial, free from fatty, cystic, and calcareous degeneration; that the uterus should not be fixed by inflammatory adhesions, etc. No one has more accurately defined the special indications for the use of the remedy than he. Whether the tumor will be affected favorably by this treatment depends, first above all, on its special location. While ergot is indicated in all forms of fibroids, the degree of its effect is in direct proportion to the localization of the tumor within the uterine wall. Not only here do we secure from the drug an effect through contraction of the blood-vessels in their unstriated fibres, but also a contraction of the hypertrophied fibres of the surrounding uterine walls. Just in proportion to the departure of the tumor from within the wall, becoming on the one side a submucous and intrauterine variety, on the other, the subperitoneal and extra-uterine; in *that* proportion are these effects lost. The sound then

would give us reliable data as to whether ergot will do much good. In a word, the sound measurement should correspond to the degree of uterine and fibroid enlargement.

But we cannot always get our patients to consent to prolonged hypodermic medication. We are forced to use the drug through some other channel. Intrauterine injections of ergot can do no good only as the drug is absorbed. This quantity must necessarily be small. The injection into the parenchyma of the cervix is open to the objection of the loss of the injected fluid, through hemorrhage at the seat of puncture, and possible local inflammation of the pelvic tissues.

Now, ergot given by the mouth is, doubtless, aided in its peculiar action by the addition of other remedies; these notably are, nux vomica and quinine. The three drugs combined make an efficacious pill which can be administered for a long time.

He thinks bromide of potassium has a good effect in some cases, by diminishing local blood-supply, and has seen it in large doses quite useful in restraining hemorrhages from fibroids.

It is not an uncommon thing for the endometrium to be diseased from fibroids in the uterine wall: chronic congestion and hyperplasia with granulations. Under these circumstances, he has found the curette, freely used, together with injections of tincture of iodine, very useful in controlling the hemorrhages, and even diminishing the size of the tumor. He has always used a special canula for this purpose, which permits the injected fluid to pass out slowly in very fine streams, and has four gutters much larger, to favor free exit of the fluid. Any retention of the injected fluid with this canula, is an impossibility.

We are indebted largely to Atlee for teaching us the benefits which may be derived from the free, deep incision of the mucous membrane in interstitial, but especially in submucous growths.

The ergotine treatment, singly or conjoined with other remedies by the mouth, the local treatment of the endometrium by the curette, ingestion and injection of medicines, and the knife, will, in the vast majority of cases, arrest the growth of the tumor, or entirely relieve the patient.

Is gastro-hysterotomy ever justifiable in this variety of fibroids? We can conceive of such a condition being possible, but only as a "dernier ressort," after a full and free trial, attended by failure of these means; only after the tumor continues to develop and threatens seriously life. Even then, under such exceedingly rare circumstances, would it not be well to first consider the propriety of the extirpation of both ovaries, an operation attended with much less mortality and with a fair promise of good result?

DR. UNDERHILL remarked that the statement to the effect that eighty per cent of uterine fibroids occur in married women—a statement which is often made to prove that child-bearing predisposes to their formation—is founded on fallacious statistics. Such computation, to be reliable, must take into consideration the *relative proportion* of the unmarried to the married. When we know what

per cent of women are married, and what per cent are single, then statistics concerning the frequency of uterine fibroids in these two states will possess some value.

Dr. TRUSH read a paper on

INDENTATIONS OF THE FETAL CRANIAL BONES DURING PARTURITION.¹

Dr. PALMER remarked that, while injuries of the scalp and depressions of the skull were far from uncommon in forceps deliveries with pelvic contractions, fortunately few unfavorable results followed.

Pressure on the brain from the forceps, or otherwise, is materially modified in its effects as to whether the vault or base of the cranium is involved. No inconsiderable pressure with moulding of the cranium in the former is borne, experience teaches us, with comparative impunity; while much less pressure at the base is speedily fatal, or is followed by choreic or other convulsions.

Simpson and Barnes have insisted that compression of the head is attended with less injury if made in the transverse than in the long diameter. A pair of short forceps, injudiciously applied at the inferior strait, with no pelvic contraction, may lead to these results.

In Dr. Trush's case, no one will be disposed to reflect upon his management; but it is interesting and instructive to inquire, whether the depression of the cranium was created by the forceps or projections of the maternal pelvis. Here the position was, as he understands, a right occipito-anterior, nearly transverse; the fetal head depression was on the right side, and at *that* end of the bitemporo-frontal diameter, the *exact seat* of impingement of the part against the sacral promontory. Now, the long labor, the strong contractions, the special obliquity of the uterine, together with the fact, as the doctor states, of some pelvic contraction of the brim, and the consequent inability for the head to settle within the pelvic cavity, make it reasonable to think that the real compressing object was the sacral promontory and not the forceps.

The speaker referred to a specimen of a fetal head in his possession, in the Museum of the Medical College of Ohio, where a deep groove ($\frac{1}{2}$ in.) can be seen in the region referred to, made by a sharp and projecting promontory of the sacrum, in a case of dystocia from pelvic contraction ($2\frac{3}{4}$ in.), necessitating perforation, in an Englishwoman who had previously had premature labor induced six times, children all born dead. The child weighed twelve pounds, the occipito-frontal diameter was $5\frac{1}{4}$ inches, and biparietal 4 inches, after restoring the shape of the head.

The possibility of injury to the scalp and cranium of the fetus in pelvic contractions by the forceps depends in no small measure on *what* forceps are used. The *Davis* forceps and its modifications, as Hodge, Wallace, etc., made to fit the fetal head, and narrow between the blades, with considerable compressing power, and

¹ See ORIGINAL COMMUNICATIONS in this number.

applied with relation to the position of the fetal head, is an excellent instrument, *so applied*. But if adjusted with relation to the pelvis, or imperfectly with relation to the head, through a mistaken diagnosis of that position, is liable to slip, may contuse and produce serious injury to the scalp and brain.

Stated Meeting, May 8th, 1879.

The President, DR. J. W. UNDERHILL, in the Chair.

DR. C. O. WRIGHT read a paper entitled

CHLORAL HYDRATE IN OBSTETRICAL AND GYNECOLOGICAL PRACTICE.

"It is not within the scope of this paper to speak of the varied and manifold uses of chloral hydrate, but simply to refer to clinical experience and practical observation of its uses, in some obstetrical and gynecological cases.

I do not intend giving any chemical analysis of its constituent parts, nor to settle its action fully in the cases in which I have used it; simply giving my experience, following with authorities to sustain me wherever I can find them.

During the past three years, I have had several cases of labor, occurring in primiparæ, where there existed an extremely rigid os, with a high degree of nervous susceptibility and irritability, wherein the pains seemed severe and wearing, without accomplishing much good. Their constant cry was for something to relieve them of their distress.

Not feeling justified, at that stage of labor, in administering chloroform and continuing its use until the termination of the case, I naturally concluded to adopt the remedy approximating it in its effects, and administered per orem chloral hydrate in fifteen-grain doses frequently repeated, as the circumstances demanded, with almost complete relief to the patients, shortening, I am satisfied, the first stage, and materially assisting in the expulsive efforts of the uterus.

Upon consulting the authorities in order to find their experience in similar cases, I find the testimony to be more in favor of its use by enema.

In my cases, I suggested its administration in this manner, but they were unwilling to submit to it.

In the *British Medical Journal* appears an article by Dr. G. de G. Griffith, that it is preferable to use it by enema, and explains it by saying that, 'in uterine, ovarian, and rectal cases, it is an especially valuable agent, inasmuch as it is brought into immediate con-

tact with the affected nerves, and acts upon them directly, deadening any hyperæsthetic condition and relieving pain.'

In my cases, I felt satisfied that the labor was hastened by its use, and am sustained in this position by a review of Schroeder, in the *AMER. JOUR. OBSTET.* for 1874, in which it is claimed 'that chloral favors uterine contraction, and promotes rapid delivery in cases where the uterine action is very painful without being efficacious.'

Again, Dr. J. B. Andrews, in the *American Journal of Insanity*, explaining its use in this class of cases in a report upon the physiological action and therapeutic use of chloral, among other things says: 'it allays muscular spasm and rigidity.'

Dr. E. Lambert in the *Edinburgh Journal* says it is useful at the close of the second stage, producing unconsciousness.

2d. The effects of chloral are continued beyond the period of complete parturition; and the repose experienced by the patient after her labor is one of the favorable circumstances to be noted in considering its application to childbirth.

3d. Labors under chloral will probably be found to be of shorter duration than when natural, for unconscious contractions appear to have more potent effects than those which are accompanied by sensations of pain.

4th. Chloral does not suspend, but rather promotes uterine contraction, by suspending all reflex actions which tend to counteract the incitability of the centres of organic motion.

Dr. Polaillon (*Am. Jour. Med. Sciences*, 1876) administered chloral in a large number of obstetric cases, forty-five grains dissolved in milk or water, as an enema.

In all his cases, it was given during 'the later hours of the period of dilatation, or during the expulsive period.' In some of the women the contractions were less obviously painful, the labor terminating in the usual time. He claims, however, that it ought to be rejected in normal accouchements.

In the *Am. Jour. of Med. Sciences* for 1875 is an interesting abstract from the *Gazetta Medica Italiana Lombardia* of a paper by Dr. Chiarleoni, giving his experience in the use of chloral in obstetric practice, from which I quote more freely.

He divides the cases to which he administered it into four groups. The first consisted of pusillanimous, indocile, irritable, and nervous women, in whom the course of labor easily becomes interrupted or suspended. In these cases its administration, while it leaves the uterine irritability intact, produces sleep, tranquillity, and diminution of pain; great benefit results. Under its action, the uterine con-

tractions acquired greater strength, while the diminution of general sensibility was not carried to suspending the feeling of all pain. Under its action the process of labor was of shorter duration.

The second group were the subjects of albuminuria, verified during pregnancy or shortly before labor. In these it was administered to prevent convulsions, and in none did they occur.

Third group; it was given in order to render operations more easy and less painful; and the fourth group were those in which, after labor had terminated, the patients were suffering from exhaustion from prolonged or painful operations.

Upon the whole he considered it as far preferable to chloroform in obstetrical practice, being easy of administration, efficacious in diminishing suffering, while not arresting uterine action.

In severe after-pains, chloral hydrate has proven very beneficial in enabling the patients to bear them better; it can be used either internally or by enema.

I have recently had a severe case of eczema of the nipples with fissures, which was extremely painful and very irritable. I tried a number of remedies without any amelioration of the symptoms. I finally prepared an ointment containing ten grains chloral hydrate to the ounce of vaseline, and requested it be frequently applied during the day. The itching was soon relieved, the fissures were stimulated to healthy action, and in three or four days the disease was cured.

In cases of pruritus vulvæ, where the cause seems to be attributable to irritation simply of the nerves, whether in the pregnant condition or otherwise, I know of no remedy equal to the local application of chloral hydrate, either in solution or in the form of an ointment. Here it acts by direct contact, producing an anesthetic influence upon the peripheral extremities of the nerves, and acting by reflex action upon the nerve itself.

I have used it in one case of excessive vomiting in pregnancy with great relief, having obtained this idea from Dr. Simmons, of Yokohama, Japan, who reports 'several cases of excessive vomiting of pregnancy afforded marked relief by thirty-grain doses of chloral in mucilage per anum, morning and evening.' He thinks most cases of nervous or sympathetic vomiting can be relieved by the use of the chloral.

It has been my good fortune, if I may so express it, to see but one case of puerperal mania, and in this, chloral was the remedy par excellence; at one time its use was suspended and morphia substituted, but soon abandoned and the chloral resumed.

Dr. Barker says, as a hypnotic, chloral hydrate in fifteen-grain doses, frequently repeated, is of great service in puerperal mania.

Dr. Peter, in the *London Lancet*, has an article upon puerperal mania, and claims that thirty-grain doses of chloral, frequently repeated, is the remedy to overcome the sleeplessness of mania, which is always worse at night, etc.

Dr. Fothergill says, . . . from its double effects upon the nervous system directly and upon the circulation, chloral has been found very useful in the treatment of mania.

Chloral is an admirable remedy, per enema, in relieving the pains of carcinoma uteri; it may also be placed in direct contact with the diseased uterus, and in that manner, by its anesthetic influence, give great relief. It also, according to Dr. Goodell of Philadelphia, relieves the offensiveness of the discharge.

It is, however, in cases of puerperal eclampsia, or in that condition of system which seems to predispose patients to convulsions, that I think chloral shows its wonderful influence. I have recently had two cases under observation, where it has been my chief reliance and did not fail me.

In the one, convulsions came on while labor was progressing. Two injections containing thirty grains each of chloral, at an interval of half-hour apart, were administered, which succeeded in limiting the convulsions to one, and the patient made a good recovery.

The other was a case having edema of the extremities, some puffiness of the eyelids, almost continuous headache, slightly albuminous urine, and from which I anticipated trouble. Fifteen-grain doses of chloral every two hours, for two days before labor set in, I am well assured prevented the convulsive seizure.

In an article by Dr. Chouppe (*Gazette Méd.*), he states he has observed its use in quite a number of cases of puerperal convulsions, and considers it one of the most reliable agents we have, and thinks its use should commence whenever there are the slightest evidences of albuminuria and edema.

He gives forty-five grains by the mouth, and if necessary fifteen grains every quarter-hour; and an enema of thirty grains. He claims one hundred and fifty or one hundred and eighty grains can be given if the paroxysms are very violent.

Dr. Dujardin-Beaumetz (*London Lancet*) records several cases treated by hydrate chloral with remarkable success. A case of eclampsia occurring two days before labor, lasting ten minutes. An enema containing 3 i. chloral administered with marked relief. As a precaution, when labor was on, two enemas containing a drachm each, at an interval of two hours, were given; no convulsion occur-

red, contractions painless, though they were more intense and frequent than normal.

In the *Gazette des Hôpitaux*, June, 1872, appears an article by M. Bouchut, upon albuminuric eclampsia and uremia cured by chloral hydrate.

Dr. Portal (*Bulletin Général de Thérapeutique*) reports three cases cured by chloral. They were subjects of albuminuria. One was attacked after parturition, two during labor. The first had had twenty-four attacks, at a quarter of an hour interval; the second eight, and the third seven. Ninety grains of chloral were administered in each case; they all recovered.

In the Transactions of the Phila. Obst. Soc., Feb'y 8th, 1878, Dr. J. V. Kelly reports an interesting case of puerperal convulsions, in the eighth month of pregnancy, where he used an enema of chloral hydrate 3 i. No return of convulsions for several hours, when same dose repeated; two hours afterwards gave twenty grains by the mouth, in combination with potassium bromide. After one or two doses by the mouth, she had no return of convulsions.

In the *Practitioner*, April, 1877, is a review of Dr. U. Charles' monograph on puerperal convulsions, giving his divisions as to causes of eclampsia, and in which he lays stress on the treatment by chloral during the interval, by the rectum, 'its action being assisted by narcotics, or combined with antispasmodics, as potassium bromide.'

In an article by Dr. Bourdou, he states where a patient near her confinement, 'suffering from edema of her lower limbs and eyelids, cephalalgia, somnolence, and a large quantity of albumen in the urine, suddenly had convulsions. Chloral, sixty grains per anum, was administered,' which induced immediate sleep. Three doses were administered the following day, and no further return of convulsions.

In conclusion, as an explanation of the manner in which chloral acts in albuminuric convulsions, I will quote from an article by J. Personne, in the *Journal of the Chemical Society of London*. He claims that albumen combines with chloral. If the action of chloral is due to the chloroform which it produces in the human system, then the greater duration of the effects of chloral over those of chloroform may be thus explained. The first action of chloral hydrate upon the albuminoid matters which it meets with in the human system produces chloroform by means of the alkali of these albuminoid matters. At the same time these matters, deprived of alkali, form a combination with the undestroyed chloral, and this combination forms a kind of reservoir of chloroform which only cedes it

gradually in proportion as the circulation destroys the combination formed. This explains why only a very small quantity of chloroform is met with in the blood of animals submitted to the action of chloral.

This theory has been accepted, notwithstanding adverse opinions, for the want of a better one."

DR. PALMER complimented the author of the paper on the comprehensive manner in which he had presented the subject. He considered chloral as a most valuable remedy in obstetrical practice. In the first stage of labor, he very frequently resorted to its use, and always, when this stage was painful, prolonged, and the cervix rigid. Simply to relieve pain, it was inferior to morphia, but ordinarily superior at this time for general purposes; securing sleep, mitigating pain, relaxing the soft parts, and shortening labor.

In puerperal eclampsia he had seen good results from its use by injection within the rectum, and it might supersede, in part at least, the employment of chloroform. It acted, he thought, although not changed in the blood into chloroform, as does this agent, and also morphia hypodermically, not in holding the albumen in the blood, as had been suggested, but by abolishing reflex action, and staying the nerve centres. It was not the loss of albumen which aided in producing eclampsia, but the uremic poisoning, which might exist independent of albuminuria. The degree of uremic poisoning, he did think, held always a definite relation to the amount of albumen in the urine.

In pruritus vulvæ, chloral locally, no doubt, might at times prove useful, for without regard to the underlying condition which provoked the pruritus (generally a local inflammation, with acrid and irritating discharges) there was always a local hyperesthesia of the nerves, aggravating the symptoms. Experience abundantly proves its value in puerperal mania.

The gynecological uses of chloral were quite limited. It had little value purely to relieve pain or control inflammations. For dysmenorrhea, in any variety, we have many more valuable remedies.

DR. REAMY said:

The introduction of anesthetics into obstetric practice created a profound sensation throughout the medical world. So brilliant and apparent are the victories won by chloroform and ether over the throes of labor and the suffering of the parturient woman, it is no wonder that the subject has furnished theme for the poet and the orator; and that a boon so great to woman should have been the subject of her dreams during sleep and of her sweetest words of praise when awake.

But these agents are, in judicious hands, now confined almost exclusively to the relief of the sharpest pangs of the closing moments of the second stage of labor, and the cases requiring turning or other prolonged and painful obstetric operations.

The question as to the danger of chloroform or ether practically is by no means of so great importance (for there are very few fatal cases

on record) as the question whether, even in the second stage, labor will be retarded, possibly the child damaged, if not its life endangered, and the woman rendered liable to post-partum hemorrhage. I speak from my own personal knowledge, obtained in the clinical study of a large number of cases, when I assert that chloroform inhaled only during the paroxysm of pain and in such small quantities as not to produce unconsciousness, will, in a considerable proportion of cases, not only lessen the frequency and force of uterine contraction, thus retarding labor, but promote also, by the same physiological effects, hemorrhage after delivery.

I concede that these unpleasant results will not always attend its administration, but it is also true that no man can tell beforehand in what subjects these unfortunate results will occur. I am aware that these facts are not new, nevertheless they are disputed in some very respectable quarters, and there are many practitioners who believe that danger to the child, delay of labor, or laying the foundation for hemorrhage, need only be feared when the patient is completely anesthetized.

The restatement of these facts, therefore, is not improper.

No such objections can be urged against chloral. I indorse most heartily every word uttered in its praise by the essayist tonight. Although it is not ranked as an anodyne, neither as an anesthetic, only as a hypnotic; nevertheless, it has the extraordinary power, and, indeed, I may say, in the present state of our knowledge, to some extent, the inexplicable power of relieving pain, relaxing the os and cervix, promoting the normal secretion of the parturient canal, quieting nervous irritability, and at the same time doing no damage to the child; increasing rather than diminishing uterine contraction, and when properly administered, during the first stage, carrying its influence of relief so as to modify the tortures of the second stage, in which it may, with perfect propriety, be administered in cases demanding it; extending its benefits from this stage to the prevention of undue after-pains, thus protecting the woman in many ways, and in several particulars, from the suffering and dangers incidental to labor.

Its conduct in the blood is not well understood, but, locally, it is an excellent antiseptic, and I am strongly impressed with the belief that this property of the agent is not entirely lost to the parturient woman when it is administered internally, prone as she is to septicemia and other forms of blood-poisoning. In making this suggestion, I am not unconscious of the fact that clinical experience does not verify, to a satisfactory degree at least, the theoretical possibilities of internal or constitutional antiseptics. Local antiseptic treatment in the form of vaginal injections and ablutions in obstetric practice is now yielding the most satisfactory results. I have found no agent, thus employed, more valuable than chloral for vaginal injection in such cases, and uterine injections are still more important. In some instances, a solution of chloral, one part to one hundred and twenty of water, is not only an excellent antiseptic, but is of great value also in promoting the early healing of

lesions in the parturient track, processes the early accomplishment of which is of vital importance in preventing septicemia.

No language of mine could so eloquently portray the value of this agent, in cases of undilatable os, as that employed by Playfair, in his admirable text-book on midwifery; and yet I feel justified in attesting my clinical knowledge of its incomparable value in such cases, all the more because it is true that very many practitioners never employ the agent at all.

I think it is the duty, therefore, of every one who has tested it to herald its value. I would not, of course, think of substituting chloral for opium in a case where apparently premature inefficient and punishing pains, associated with an undilated and undilatable os, abdominal tenderness, vaginal heat, sleeplessness and nervous agitation call for the three or four hours' refreshing sleep which, under such circumstances, opium or some of its preparations alone can give; to be followed, when given in full doses, by natural and efficient pains, and often a speedy termination of labor.

In such a case I know of no substitute for opium. But these cases constitute a very small proportion, as compared to those wherein chloral will act as by magic.

My experience with chloral in *puerperal eclampsia* justifies the claim of its great importance as a therapeutic agent in this serious complication of labor. It cannot, of course, be relied upon, to the exclusion of other agents, nor will it, or any other remedy, be adapted to all cases; for neither the etiology nor pathology of eclampsia are uniform.

There is to my mind, however, great plausibility in the theory of Traube and Rosenstein: "acute cerebral anemia and a hydremic condition of the blood which is a concomitant of the pregnant state; with increase of the watery elements, there is increase of the arterial system, associated with hypertrophy of the heart. These conditions produce temporary hyperemia of the brain, resulting in effusion and pressure on minute vessels, followed by anemia."

The first effect of chloral is to raise the arterial tension, but almost immediately following, there is greatly diminished arterial tension with weakened action of the heart. These results, associated with its calming effect in reducing cerebro-spinal susceptibility, quite satisfactorily explain the mode by which chloral acts so beneficially in these cases, and, as has been stated by the essayist, the most profitable time to secure this action is before the convulsive seizure. This is quite practicable, for in many cases, the experienced practitioner can foresee the dangers of an attack and avert it before it bursts upon his patient.

I think it extremely profitable to combine with the chloral, in these cases, bromide of potassium, which certainly greatly increases its efficiency in allaying reflex cerebro-spinal action. In some cases it is also quite profitable to use, conjointly with these remedies, morphia hypodermically.

ABSTRACTS.

GYNECOLOGY.

1. AMPUTATION OF THE VAGINAL PORTION OF THE CERVIX UTERI.—DR. MÆRIKE, of Berlin (*Zeitschr. f. Geburtsh. u. Gynäk.*, III. Bd. 2 Hft.), analyses one hundred consecutive operations by Schröder, in which more or less of the cervix was removed with the knife or scissors, and gives a critical review of the various methods of operating. Clark's method by a gradually tightened ligature has, on account of its dangers, never been much practised. The chain *écraseur* is liable to open into the peritoneum, the bladder, or the cellular tissue of the pelvis; the chain often breaks, making it necessary to finish the operation with other instruments; and the process of healing necessarily involves suppuration and granulation. For these reasons the *écraseur* is now seldom used, except with Simon's procedure, which consists in first drawing the uterus down to the vaginal orifice and transfixing it with one or two long needles, in front of which the instrument is applied. Maisonneuve's constrictor is far less dangerous, is easily used, and cuts through the tissues almost like a knife, but it is open to the same objection that healing is a protracted process. The galvanic cautery-loop is attractive at first sight, but the apparatus is very costly, exacting in its management, and so awkward of transportation that it is scarcely suited to private practice. It is apt to be out of order just when it is wanted. The wire is apt to get out of place and produce injury, or it may slip off and leave pieces behind to be removed subsequently. It can cut only straight across, or with but very slight obliquity, and thus the radical removal of every diseased portion is often impossible. Hemorrhage at the time is avoided indeed, but so, too, is primary union prevented; and secondary hemorrhage often attends the separation of the eschar. The latter, it must be confessed, now and then follows the cutting operation. A far more serious objection is that cervical stenosis and even atresia may follow.

The cutting operation is easy when the uterus admits of being drawn down, and in case it is abnormally fixed we need not guard so very carefully against bringing it down to a moderate extent, for the peritoneum tolerates the gravest injuries. The fatal result in two of Spiegelberg's cases, attributed to a too energetic depression of the uterus, was more likely due to a septic peritonitis.

It is self-evident that the removal of each lip separately, after splitting the cervix laterally, as recommended by Sims, makes the perfect removal of all the diseased tissue easier than if the whole is removed in one piece; the loss of blood is less, too, for the wound made by the removal of one lip may be treated before we proceed to the removal of the other. In the cases reported, Hegar's circle of sutures was almost always used whenever the cut surface was not treated with the hot iron—Sims' suture only twice, being thought less sure to stop the bleeding and more likely to lead to stenosis or atresia of the cervix. The operations with the uterus in situ were done with the aid

of Simon's speculum, the double-edged lancet-knife being used, and generally a straight one. The great advantages of the cutting operation are, that only with the knife or scissors can we remove precisely what is necessary, cutting away as much as we find requisite as we progress; this method alone allows of primary union, leaving no eschar or ichorous surface; it alone admits of suture, the best known hemostatic (although not an absolute preventive of secondary hemorrhage); the process of healing, if no unforeseen mishap occur, is considerably more rapid than after *écrasement* or the galvanic cautery; and, at least with Hegar's suture, if properly applied, stenosis or atresia of the cervix does not occur at all. Of late, Schröder has passed the sutures not merely through the cervical mucous membrane, but deep into the parenchyma, thus making firm compression of the cut surfaces and avoiding all danger of secondary hemorrhage. Compression of the aorta readily controls the bleeding until the sutures are applied. Where the operation is done to lessen the weight of a prolapsed uterus, as a preliminary to colporrhaphy, the cervix, especially the anterior lip, is often concealed by the hypertrophied vagina, or there is complete ectropion; so that precision in anatomy is requisite in order to operate with certainty and safety. In such cases Schröder generally splits the cervix to begin with, and then removes a wedge-shaped portion, sometimes dissecting the anterior lip away from the bladder, and finishes with Hegar's suture. In cases of cancer, the hot iron or Paquelin's cautery is almost always freely used—not as a hemostatic, but to destroy any remnants of the neoplasm, and at the same time to bring about a smart inflammation and formation of connective tissue, with consecutive cicatricial contraction, thus checking, at least for a time, the proliferation of epithelium.

The author then describes Schröder's method of operating for total extirpation of the cervix in cases of carcinoma. The uterus is drawn down with a Muzeux's forceps, and a thread is applied to each of the parametria thus put upon the stretch, by which any bleeding that may occur may be controlled. A circular incision is now made through the vault of the vagina, and the operator then works in the cellular tissue between the bladder and the rectum, immediately beneath the peritoneum. The latter is dissected away from the cervix posteriorly with the finger or the handle of the knife, and the cervix is then amputated up to the os internum if necessary. Finally the vault of the vagina is closed with deep sutures, passing partly through the parenchyma of the uterus.

In cases of glandular degeneration of the cervix, in which a cone consisting of little more than mucous membrane was removed, the remaining portion of the cervix was turned in and stitched to the cervical mucous membrane.

The operation was always done with the patient in the lithotomy position, anesthetized with chloroform. Hemorrhage which did not yield to the actual cautery or the suture was controlled by tampons containing chloride of iron or by plugging the vagina.

F. P. F.

PEDIATRICS.

2. PNEUMATIC THERAPEUTICS IN CHILDHOOD (*Jahrbuch f. Kindhkk.*, XIII. B. 3, 4).—DR. IGNAZ HAUKE, of Vienna, divides the methods of application of atmospheric pressure to therapeutics into two general classes:—1st, in which the whole body is exposed to increased or diminished pressure in a pneumatic cabinet, and 2d, in which the increased or diminished pressure is in an appar-

atus external to the body, and is exercised only on the thoracic organs. This second method may be again divided into two, 1st, in which the application is made through the air passages to the internal surface of the lungs, and 2d, by means of a firm "Panzer," or air-tight "coat of mail," applied to the outer surface of the thorax. In the use of the cabinet, the *chemistry* of respiration is mostly affected, while by the "Panzer" or the air-tube applied to the mouth and nose the *mechanism* is especially assisted. The easiest and deepest inspiration would be given by either increased pressure through the air-passages or vacuum in the Panzer, while full expiration would demand the reverse of either of these. From numerous experiments the author finds that the muscular acts of inspiration and expiration do not much assist the inflow or exit of compressed or rarefied air from the receiver except when there is some obstacle to the stream, so that the force of pressure and vacuum may become nearly equal, as, for instance, in swelling of the glottis in inspiration or in emphysema in expiration. In using the Panzer, on the other hand, the acts of inspiration and expiration unite their force to the decreased or increased pressure on the thorax. In using either the Panzer or the "mask," it is much easier to apply them with a *vacuum*, since the atmospheric pressure aids in holding them in place. Expiration, therefore, is most easily assisted by the mask and inspiration by the Panzer. The latter also affects the circulation more favorably.

The author has in another work described the "Panzer," and also shown how applicable it is to children; 1st, because of the elasticity of the thoracic walls, 2d, because of the frequent obstacles to respiration in the narrow air-passages, and 3d, because it can be applied without the assistance or even against the will of the child.

He now gives the results of four experiments upon cadavers, and of 32 cases of treatment by pneumatic therapeutics. From the former he concludes that by the Panzer or mask natural respiration may be perfectly simulated, although with great risk of subpleural emphysema, pneumothorax, filling of the stomach with air, etc. The danger of the proceeding cannot well be judged from experiments on the cadaver, because, while the stiffness of the thoracic walls prevents their distention, the degeneration of the tissues on the other hand tends to rupture.

The thirty-two cases of treatment are given in detail. The apparatus was applied either once or twice a day and for five to ten minutes at a time. The conclusion arrived at is that the pneumatic treatment can increase the air contents of the lung or even aerate perfectly solid lungs or portions of lungs. The percussion sound was frequently changed from dull to sonorous and a decided circumscribed flatness was often made to disappear. In one case this flatness was due to atelectasis from compression, in another to induration, in a third to an old cavity surrounded by indurated tissue. In several cases of chronic infiltration the treatment was immediately followed by symptoms of resolution, while in others the resorption and expectoration were greatly aided. In all the cases of chronic pleuro-pneumonia the treatment was undoubtedly of great advantage. It seemed also to have a beneficial influence on the general condition of the patients.

The Panzer was usually used, and it was found necessary to take three to five full inspirations before the deepest type was reached, and again three to five expirations before the lungs were most fully emptied. The inspiration was also sometimes deepened by irritation of the cutaneous nerves by the

application of cold water, etc. This was done especially in cases accompanied by fever.

The cases most appropriate for the pneumatic treatment are :—

1. Asphyxia. In new-born children, when other means have failed, the application of a simple Panzer will not only imitate the motions of respiration, but will also aid the action of the heart, filling the right auricle in inspiration, sending the blood into the right ventricle in expiration, then on through the lungs into the other side of heart.

2. Congenital Atelectasis. Sometimes, though the child has begun to breathe, the inspiration is insufficient ; there is, perhaps, some stoppage from mucus or other obstacle ; the thoracic walls seem too weak to fully expand the lungs. Such children have a rapid, superficial respiration, small pulse, blue color, cold extremities, general weakness, small, trembling voice, and inability to nurse. In all such cases the Panzer is eminently in place.

3. Catarrhal pneumonitis, when the finer bronchial tubes have become stopped with secretion and the children are too weak to cough strongly or take a full inspiration, and are therefore in danger of atelectasis. Slight fever is no contraindication, nor is an old croupous or catarrhal bronchitis or pulmonary infiltration.

4. Chronic, stationary, pleuritic exudation. Here the treatment fulfils the following indications: *a.* to facilitate the inspiratory distention of the thorax ; *b.* to increase the thoracic aspiration and relieve the organs of this cavity from the pressure of the exudation, thus increasing the circulation and indirectly aiding in the resorption of the exudation ; *c.* to expand a lung and a thoracic wall which has been drawn in by an old adhesive inflammation. This is eminently the case where there is pneumothorax with an external fistulous opening. By means of the Panzer, air is drawn out of the pleural cavity, the opening closed by a valve of some kind, and the lung thus forced to expand ; *d.* by full distention of the lungs to stretch all adhesions and counteract the tendency to inflammatory processes terminating in cheesy degeneration and tuberculosis. The author cautions against using the pneumatic treatment in the acute stage of pleuritis. It then only increases the exudation.

5. Croup. Experience is rather against the pneumatic treatment.

6. Rhachitis. The principal characteristics of rhachitis, the smallness and typically altered shape of the thorax and the difficulty of respiration due to the softness of the ribs, are all so many indications for pneumatic treatment. In rhachitis the growth of the thorax, as compared to the head, is always backward. This smallness is due to a shortening of the lateral and vertical diameters, while the antero-posterior is sometimes even lengthened. The diaphragm in such children is also usually pressed upward by the distention of the bowels. United with the diminished inspiration is naturally diminished thoracic aspiration, hence diminished arterialization of the blood and poor nutrition, diminished excretion of water, and following this the "soaking" of the tissues, tendency to sweats, catarrhs, etc. The more marked these symptoms, the greater the indications for pneumatic treatment. Other stimulants to respiration fail on account of the yielding of the chest-walls. A mechanical treatment, a respiration which causes equal and normal enlargement of the thorax in all directions is a necessity, and the softness of the walls a factor in its favor.

In regard to the methods of treatment, the author always uses the "Panzer"

for small children. This he has described in another article. (It consists of either a firm frame-work about the chest and over this an air-tight shirt of some impervious material fastened about the waist and with a long flap at the neck, or, for larger children, a sort of metal case fitting about the thorax.) With this is connected the pneumatic apparatus for vacuum or compression, described at too great length for abstraction. It is like a gasometer, with a wheel for rapidly raising or lowering the inner cylinder, to which is attached the tube passing to the "Panzer" or "mask."

J. F.

3. A COLLODION BANDAGE FOR UMBILICAL HERNIA (*Central Zeitg. f. Kindhvk.*, 1 Jahr. No. 21).—DR. A. MONTI, of Vienna, describes the application of Rapa's collodion bandage for umbilical hernia, giving first a classification of the varieties of hernia in this situation, and the indications for treatment of any kind. Rapa's bandage is applied as follows:

The mother takes the child upon her lap, holding its upper extremities with her left hand and its lower with her right. The hernia and neighboring parts are now painted over in a broad stripe with collodion. The hernia being reduced, a double compress, about 4 cm. long and 3 cm. broad, with its lower surface soaked in collodion, is held upon it by an assistant, while a strip of adhesive plaster about 3 cm. broad is passed over it around the child, and its ends crossed in front. While this is being applied, the assistant pushes together the recti muscles. Over this is applied a long linen bandage, and then the whole thoroughly painted with collodion. Dr. M. uses instead of ordinary adhesive plaster, which sometimes causes eczema, the following:—R. Emplast. diach. simp., 30.00; Cerati fusci, 10.00; Ol. oliv., 9.5 ut liquefact., ft. emplast. D.S. Even when the children are regularly bathed, the bandage will stay in place two or three weeks. It gives, therefore, the advantage that it may always be applied by the physician in person, and the hernia thus properly reduced and retained.

J. F.

4. TREATMENT OF INTERTRIGO IN CHILDREN (*Deutsches Archiv f. Clin. Med.*).—DR. A. WERTHEIMBER divides the indications for treatment in these cases into two—1st, to allay the cause, and 2d, to heal the existing lesions. In speaking of the first, he mentions especially the good effect in cases accompanying dyspeptic diarrhea, of adding to the milk used a not-too-thick solution of barley-water—in the first two months about three to one, then to the fifth month, two to one, and later equal parts. For cleansing he used the ordinary baby-powder, or, when the surface is excoriated, a decoction of bran, not to be dried off. The usual zinc and lead salves he regards as harmful, and for fresh cases praises Hebra's ung. diachylon, while for more severe cases he always uses corrosive sublimate, which he finds always successful in the shortest time. He applies on cloths a solution of one grain to four ounces of water, applying fresh cloths three or four times a day, and letting them remain on for about an hour each time, or even keeping them continuously applied. He has never seen any evil effects from absorption of the sublimate.

J. F.

5. THE EXFOLIATIVE DERMATITIS OF YOUNG INFANTS (*Central. Zeitg. f. Kindhvk.*, 2 Jahrgng., No. 1).—PROF. GOTTFRIED RITTER v. RITTERSHAIN opens the second year of this magazine with an elaborate article on the above subject. After general remarks upon the importance of comparing the pathological processes of the early periods of life with those occurring in later years, and the value of observations extending over long series of cases, he draws from these the reasons for going deeply into the subject. "Dermatitis

exfoliativa," though occurring exclusively in the first weeks of life, does yet have points of likeness to the skin diseases of later years, and the Professor has for ten years carefully studied a long series of cases of it.

First of all, he states that it is not, as some have claimed, a disease endemic in and peculiar to the Prague Foundling Asylum, and due to want of cleanliness or care, but one which is found among the best families, and one which did not make its appearance in the asylum during four and a half years of the Professor's earlier service there. He quotes his own words from the asylum report for 1868 to show the commencement of the disease. From that date on, it has existed continuously there, and soon after it made its appearance in the country thereabout. The Professor regrets that the profession took so little notice of the description of the disease published by him in 1868, and again in 1870, in the *Oesterr. Jahrbch. f. Pädiatrik*, under the name *Dermatitis erysipelatosæ*, which he now sees fit to change to *D. exfoliativa*.

From interesting statistical records, we find that 125 boys were attacked for every 100 girls, and the death-rate in boys was 50.91 per cent, and in girls 46.21 per cent. The frequency of occurrence in different years seemed to bear no ratio to the death rate. The time of attack was rarely in the first week, *most frequently in the second week*, and then less and less frequently until, after the fifth week, cases were extremely rare. When it occurred as late as the fifth week, it was in premature children or those who were backward in development. The mortality was 49.50 per cent.

CLINICAL HISTORY.—The more acute cases are distinguished from the sub-acute, not only by their slower course, but also by the greater turgescence of the tissues and richer exudation. The stages, not very clearly separated, are:—Prodromal Stadium, S. of Hyperemia and Exudation, S. of Exfoliation and Exsiccation, S. of Reintegration of the epithelium and consequent desquamation, and S. of Sequelæ.

S. Prodromal usually begins with heat, dryness, and desquamation of the skin, occurring later than the usual infantile desquamation.

S. of Hyperemia usually begins with a slight hyperemia about the mouth and lower half of face. This increases rapidly in intensity and extent, often covering the whole body. Rarely the redness is general from the first, but even then the dark appearance of the face is most striking. The corners of the mouth crack open, the membrane of the mouth and fauces is reddened, swollen, and in spots denuded of epithelium, or covered with gray plaques, or, especially on the soft palate, with shallow ulcerations. With all this, the child nurses and thrives well, increases in weight, and *shows no increase in temperature* (in rectum). As the redness extends over the body, further changes take place in the face, the process being often far advanced in the face before the extremities are at all involved.

S. of Exfoliation. The whole lower part of the face becomes covered with a yellow and red crust of scabs, cracked and broken in lines radiating from the mouth. The child still nurses well, and does not seem to suffer. On other parts of the body the cuticle seems to be separated from the body by fluid, which, while usually not forming vesicles, seems to macerate the cuticle and separate it from the deeper layers in large patches. The appearance is as if it were soaked, creased, and rumpled, and if such a surface is rubbed, the cuticle is entirely removed. The cutis underneath appears dark-red and glistening from the exudation, like the surface of a burn after removal of the epidermis. Later this exudation dries to bloody scales, or the surface is covered with a grayish deposit, the whole offering a frightful picture. The

order is usually face, neck and shoulders, body, upper, and then lower extremities. From hands and feet the cuticle often comes off almost like a glove.

There are many variations in these two stages—the face sometimes remaining almost free, sometimes being the only part attacked, the exfoliation being greater or less in various parts of the body, etc. In general, the more severe forms occurred in weak children, while the variations from this picture and the abortive attacks were rather among strong, hearty ones. Sometimes the erythematous portions become covered with an eruption of miliary vesicles, sometimes the appearance is more that of eczema, while at other times the size and distribution of the vesicles reminds one more of pemphigus. Whoever has watched the disease in these its variations, can, however, have no doubt at all that it is in all cases the same identical process varied only by individualities.

S. of Regeneration. The denuded cutis rapidly dries, becomes like parchment, of a dirty, brown-red color, which, in fatal cases, remains, but in cases running a favorable course, rapidly fades into a pink color, with an appearance of dust or branny scales upon it, and in twenty-four to thirty-six hours the skin is again renewed, and there remains nothing of the disease in that spot but the fine, branny desquamation. In the face new skin is usually formed before the crusts drop off.

The constitutional symptoms during these stages are slight. Death sometimes cuts the disease short, or complications change the picture, but in the, so to speak, normal course of the disease, there is no rise of temperature, the child nurses well, and continues to increase steadily in weight, or at least does not lose weight.

Duration of the stages. From the first trace of hyperemia on any portion of the body to the full regeneration of the skin in the same spot, is from seven to ten days. The stages run so closely into one another, and so many stages exist at the same time on different parts of the body, that it is impossible to state accurately the duration of each. The stage following those already described, the *S. of Sequelæ*, also varies greatly in kind and duration.

S. of Sequelæ. Furunculosis. Not only does the furfuraceous desquamation continue for five to eight days, but there arise spots of circumscribed eczema, furuncles, small subcutaneous abscesses, etc. Even in the healthiest children, and those not at all weakened by the previous stages, some of these small abscesses are present, though here they are few in number and show no tendency to relapses, while in weak children they form a serious obstacle to convalescence. In the worst cases, the eruption of furuncles is copious, and there are large spots of phlegmonous infiltration, or even of gangrene, which are too frequently accompanied by colliquative diarrhea, pneumonitis, etc., in short, metastatic pyemic processes. Even in favorably terminating cases of this sort, it is long before the pyemic tendency is overcome and the child gains its strength. *Relapses* have been observed in a very few cases in the last years. They came on about ten to twelve days after the first attack, and were very slight, running their course in a few days.

PATHOLOGY.—From careful reasoning, the Professor concludes that the disease is “undoubtedly one of the various forms in which *pyemia* manifests itself in children.” It is principally confined to the skin, and hence the name dermatitis, while the appropriateness of the adjective *exfoliativa* is seen from the description.

DIAGNOSIS.—Careful and full differential diagnoses are given. Erythema

neonatorum has already occurred before the date of dermatitis exfoliativa. Erysipelas is excluded by the *absence of any elevation of temperature* (in rectum), as also the difference in the manner of extension of the inflammation, the exfoliation, etc. Pemphigus resembles it in some particulars, and under the name "pemphigus exfoliatus," probably many cases of dermatitis exfoliativa have been described. That they are certainly different processes may be seen from the clinical history already given. In pemphigus the skin is intact between the vesicles, in dermatitis there is diffuse redness, or where this is absent, there is not found the characteristic border of the pemphigus vesicles, the accurate circular form, nor usually the yellow fluid contents. The epidermis in pemphigus is not thickened; in dermatitis it is. Pemphigus occurs in rapid relapses with fresh groups of vesicles; dermatitis rarely relapses. From syphilis the diagnosis should present no difficulty.

POST-MORTEM APPEARANCES show nothing particularly characteristic.

ETIOLOGY.—The disease is certainly neither infectious nor contagious. Further than this the Professor acknowledges his absolute ignorance of and inability even to suppose a cause.

TREATMENT.—Most important of all is good mother's milk. Whatever will improve this, preparations of iron, better food, tonics, etc., will, of course, be given to the nursing woman. There are no direct or specific remedies. We cannot prevent, cut short, or even diminish the violence of the attack. We might say that the prophylaxis consists in "avoiding everything that might give rise to pyemia," but this is saying "on the one hand, much too much, and on the other, nothing at all."

The children's bathing may be continued, and the baths should be *cool*. The air of the room must be kept fresh and not too warm, and the covering of the patient light. As soon as exfoliation begins, it is better to do away with all shirts, etc., and wrap the children in smooth sheets with no folds or creases: and great care must be taken in changing these, the denuded and adhesive cutis being soaked loose with warm water, and before the child is again wrapped up, powdered with calomel or some fine baby-powder. The rolled-up edges of the epidermis should be removed with scissors. In the face or any locality where we have thick scabs, these must be softened by frequent softening with pure olive or almond oil, and removed with dressing-forceps. Brushing with oil is also grateful to the patient when the denuded spots show a tendency to dry or crack. Through the whole course of the disease, the author recommends baths of *oak-bark*. In the way of internal remedies, there is nothing to be recommended. He has tried quinine in large and small doses, but seen no good effects. Complications from the side of the stomach, intestines, or lungs must be watched for and quickly met. Later on, abscesses must be opened, gangrenous spots cared for, etc., while the oak-baths are continued, and the child strengthened by iron, quinine, and other tonics. The eczema sometimes following it is best met by balsam of Peru.

Apologizing for the roughness of this clinical sketch (made much rougher by the necessary shortening of an abstract), the author recommends it to the consideration of his colleagues.

J. F.

THE AMERICAN
JOURNAL OF OBSTETRICS
AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XII.] OCTOBER, 1879. [No. 4.

ORIGINAL COMMUNICATIONS.

THE MECHANICAL TREATMENT OF BACKWARD DISPLACEMENTS
OF THE UTERUS.

BY

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New Orleans.

(With nine woodcuts.)

ON this subject so much has been said and written that one would suppose that these displacements were at present fully understood, and their treatment successful at least in the hands of specialists. Were this the case, I certainly should not venture to lay this paper before the profession, although I can speak on the subject, fortified by a long experience.¹ Our text-books on gynecology treat more or less ably of the displacements; but is there one that gives sufficient instruction to prevent a young practitioner, while trying his hand, from injuring his patient? I believe not. The opinions and methods of different authors are as yet all at variance on this subject. Some of them consider inflammation and hypertrophy the more common cause of displacements, and others believe displacements to be

¹ I commenced the use of Hodge's pessaries in 1860, and that of the intra-uterine stem in 1865.

the cause of inflammation and hypertrophy. Their treatment differs therefore materially. The first institute antiphlogistic measures in the beginning of the treatment, while the others replace the uterus first and then treat the inflammation. Both claim success, of course. The etiology of each individual case should naturally decide this question, but histories of cases are sometimes unsatisfactory, and it is indeed often very difficult to state whether the displacement is cause or effect. As to pessaries, there is a still greater diversity of opinion, and there are at present nearly as many different pessaries as there are able gynecologists. This country especially has furnished us with more devices or patterns than any other, and certain gynecologists have by their different pessaries shown that they have given the study of displacements a great deal of attention.

The question in my mind, however, is this: Has this attention to, or rather, the study of displacements generally, been conducted in the proper direction? I am inclined to think not. As long as we yet speak of Hodge's, Thomas's, Cutter's, etc., pessary, instead of certain principles which are based upon thorough anatomical, physiological, and clinical research, we tacitly admit that we have no settled points in the mechanical treatment of displacements. We know very well that there are not two cases of displacement alike, but that should not prevent us from applying certain principles of practice, good for all, to each, with modifications for each individual case. This modification, however, should only apply to the shape and size of each pessary; the principles of treatment remaining the same in all.

It is not my purpose in this paper to criticise the pessary of Dr. or Professor So-and-so, or to point out the erroneous principles upon which it may be constructed; but to lay before you a theory and practice that I have adopted for years, and which in my hands has been so perfectly successful that it leaves nothing to be wished for. This is all that I shall be able to do in this paper, and I feel convinced that practitioners, who are very close observers during their examinations and manipulations, and who are possessed of a considerable degree of mechanical talent or ingenuity, will succeed with my plan; while physicians who have no talent for mechanics will almost

invariably fail, become disgusted, and only help to bring the mechanical treatment into greater disrepute.¹

Permit me now to draw your attention to the physiological position of the uterus in the pelvis and to its anatomical relations. The position of the uterus in the pelvis differs according to the posture of the woman, because the intra-abdominal pressure acts in different directions, as the position of the woman is altered.

It is also greatly influenced by the varying condition of the rectum and bladder, whether filled or empty. The study of the position of the uterus in the cadaver, even in freshly frozen bodies, necessarily leads to no reliable results, because with the extinction of life and the stopping of the circulation the uterus and its delicate neighboring tissues lose their natural firmness, become flabby, and follow the law of gravity. Our only way to study the position of the womb, therefore, is the examination of the living, and this gives the following results, according to our best authors and my own research.

When the bladder and rectum are perfectly empty, the uterus occupies a central position in the pelvis, and the summit of its fundus lies a little above the inner margin of the symphysis pubis, slightly inclining to the right side, while its cervix points to the sacrum. The uterus itself is slightly bent or rather curved forward. This position is, of course, continually altered by the filling of bladder and rectum, and by the ever varying abdominal pressure, produced by changes in posture of the body, by the action of the diaphragm (respiration, coughing, sneezing), and by that of the abdominal muscles (lifting, straining). As the bladder fills itself, the uterus is gradually raised upward and pressed backward, so that, when it is perfectly full, the posterior uterine wall may rest against the anterior wall of the rectum. Under this condition, of course, all small intestines, that during the empty state of bladder and rectum fill the space of Douglas, are driven out.² As the

¹ Thomas A. Emmet: *Principles and Practice of Gynecology*, p. 314 et seq.

² Ludw. Joseph: *Beiträge zur Aetiologie der Uterusflexionen* (*Beiträge zur Geburtshülfe und Gynaekologie*, Vol. II., p. 109 et seq.). Hodge: *Diseases peculiar to Women*, 2d edition (Drawings). Luschka: *Die Anatomie des Menschen*, 1864, Vol. II., 2d part, p. 355. Virchow: *Ueber die Entstehung der Uterusflexionen* (*Allgemeine Wien. med. Zeitg.*, 1859, No. 4).

Of contrary opinion are: Ed. Martin: *Physiologische Lage u. Gestalt*

bladder is emptied, the fundus uteri sinks forward, and the loops of small intestines, sliding down on the posterior wall of the uterus and broad ligaments, again fill Douglas's pouch. The influence of the full rectum is not nearly so important. It is true that a full rectum presses the cervix uteri forward and drives the small intestines out of Douglas's space, but the fundus will very nearly remain in its position. There are, therefore, three factors which continually, but only temporarily, alter the position of the uterus physiologically, viz.: The state of the bladder, that of the rectum, and the intra-abdominal pressure.

Now let us study for a moment Nature's means for supporting the uterus in this ever-changing position. The uterus is with its lowest portion inserted into the vault of the vagina at an angle of about 90° , and finds its principal support from below in this, and in the cellular tissue surrounding it, which are again supported by the levator ani and the perineum. In front, just about the os uteri internum, the uterus is fastened in a very secure manner to the bladder¹ by a peculiarly tough cellular tissue and the forward duplications of the peritoneum (plicæ vesico-uterinæ) which, containing muscular fibres coming from the uterus, have been called ligamenta pubo-vesico-uterina (Hyrthl) or ligamenta utero-vesicalia. In the rear we find, corresponding in height to the insertion of these, the duplications of the peritoneum, which, as they likewise contain muscular fibres, have been called muscoli retractores (Luschka) or ligamenta utero-sacralia, running on both sides of the rectum to the spine. The exact spot of their insertion is as yet not settled. Both these sets of ligaments are by the greater number of authors on anatomy and gynecology, who have studied the anatomy of the same minutely, considered very feeble means of uterine support. Just so it is with the ligamenta lata formed by peritoneum, which after enveloping the uterus, pass under the above name to both parietes of the pelvis. Although these ligaments are also furnished by the uterus with numerous elastic and muscular fibres, they are,

der Gebärmutter (Zeitschrift f. Geburtsh. u. Frauenkrankh., Vol. I., p. 384). Hüter: Die Flexionen des Uterus, 1870, p. 16. Claudius: Henle u. Pfeiffer Zeitschrift f. rationelle Medizin, 1865, Vol. XXIII., p. 249.

¹ Ludw. Joseph, loc. cit., p. 122.

from their loose attachment, generally considered as of little or no importance in the fixing of the position of the uterus. The ligamenta rotunda contain smooth and striped muscular fibres and could, running from the cornua uteri to the mons veneris, be of service to hold the fundus uteri forward, if they were short enough. But they run in an arch, and are so long that they can apparently only come into action after the fundus uteri has been driven beyond the median line of the pelvis. So we must judge from the appearance of these ligaments after death. In life, however, they may be able to contract, as their striped muscular fibres would suggest, and I do believe that they do so, at least at times, under the action of such stimulus as coitus.¹

From the foregoing it will be seen that I find the chief means of support of the uterus, 1st, in the vagina and the cellular tissue surrounding it, supported by the levator ani and the perineum; and 2d, in its secure attachment to the bladder, to which I will add, 3d, the probable action of the ligamenta rotunda. The ligamenta utero-sacralia, utero-vesicalia, and lata are but feeble means for the purpose of holding the uterus in anteversion. And yet I consider the broad ligaments of great importance, not as ligaments per se, but on account of the large surface they offer to the intra-abdominal pressure, a force which, when applied to the posterior face of the ligamenta lata, will certainly prevent retroversion of the uterus, while it, when acting upon their anterior surface, will as surely increase an already existing backward displacement. It appears superfluous to recapitulate the different causes of backward displacements, inasmuch as they are generally well understood, and I shall therefore proceed to explain the principles of treatment for these cases, as they in my opinion are derived from the anatomical position and relation of the uterus to its neighboring tissues, from the physiological action of bladder and rectum, and from the action of the intra-abdominal pressure, as before described. I consider women as suffering from backward displacement of the womb (and all degrees of retroversion are pathological), in whom the fundus uteri lies so far backward that the intra-abdominal pressure falls upon its summit or upon the anterior wall of the uterus, no matter how

¹ Ed. Martin, loc. cit.

little inconvenience this position may give to the patient. For that everlasting force, intra-abdominal pressure, will in time depress the fundus uteri as far downward as it can, therefore continually straining the ligamenta utero-sacralia and the cellular tissue, until these having yielded, the axis of the uterus lies in that of the vagina. The womb may now, by the same force, aided by that of the rectum, be driven low down into the vagina (prolapsus) or even through its sphincter (proci-dentia). Nature's apparatus for the support of the uterus appear to me sufficient only as long as they are strong and healthy, and *as long as the uterus lies in physiological anteversion* to receive the intra-abdominal pressure upon its posterior wall (Fig. 1). In cases of backward displacements it will be,

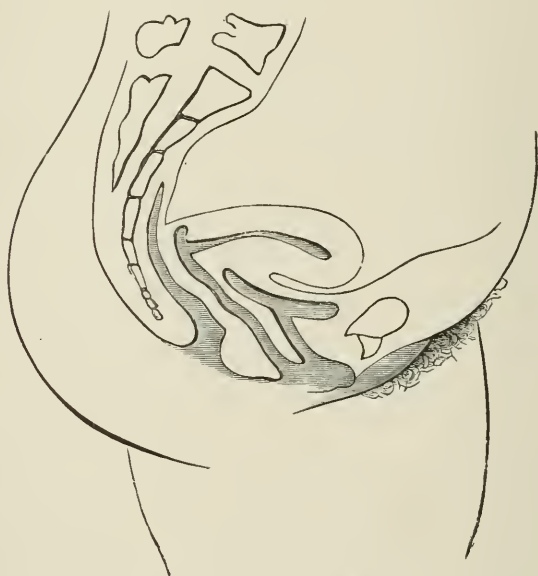


FIG. 1.—Position of the uterus in the pelvis (after B. Schultze).

therefore, our first duty to replace the uterus, that means, to throw it forward, so as to get the intra-abdominal pressure to bear upon the posterior wall of the womb and the posterior surface of the broad ligaments; and the second will be, to hold it in this position until by general treatment the ligaments and the cellular tissue have regained their former health and strength, or until the impregnated uterus has become of such

size that it cannot fall backward any more after the support has been removed.

In recent cases of backward displacement of the uterus, the replacing of this organ is usually a very simple operation, but it can become very troublesome in cases with extreme shortening of the posterior vaginal wall, and quite impossible where strong adhesions bind the uterus down. Fortunately, these adhesions are not nearly as common as is usually supposed and should not be thought of until they are distinctly recognized by the touch. The simplest method of replacing the retroverted uterus is perhaps the following:

Having made an exact diagnosis by bimanual examination, with the patient on her back, as well as in the standing position, both bladder and rectum being empty, she should be placed in Sims' position for the purpose of removing the intra-abdominal pressure from the uterus. Now two fingers of the left hand, well lubricated, should enter the vagina into the posterior cul de sac and press it up- and backward, while the thumb of the same hand is applied to the anterior face of the cervix. As soon as both fingers and the thumb are in position, the points of the fingers in the cul-de-sac should be suddenly pressed upward and forward, while the thumb pushes the cervix back- and upward. This manœuvre succeeds in nearly all cases, but is only applicable in women who have borne children. In women with narrow vaginæ our tactics must be changed, by inserting the two fingers into the rectum, the thumb into the vagina and causing the same pressure. The uterine sound and Sims' redressor for the purpose of replacing a retroverted uterus seem to me uncalled for and are certainly too powerful instruments in the hands of unskilled operators. All the good that can be done with them can as well be done with the fingers, *the patient being in the position before mentioned*. The shortening of the posterior vaginal wall, as well as slight adhesions situated low down, are best overcome by a process of gradual stretching of the posterior wall of the vagina longitudinally, by a properly shaped pessary, without using undue force.

All gynecologists seem to agree in the opinion that the shape of vaginal pessaries should be in conformity with the shape of the vagina, and prove this practically by using mod-

fications (so called) of Hodge's double lever, most of which, however, cannot even be applied as levers in the sense of Hodge, but act merely by lifting the uterus.¹ They accept the shape, but find the principle upon which the pessary is made superfluous. Here it is where I differ with our gynecologists. I accept the shape and the lever principle, and apply my pessaries in such a manner as to utilize the intra-abdominal pressure. Having replaced the retroverted uterus, that is, having thrown it forward as far as possible, I make a pessary à la Hodge in such manner that the length of the short and long arms, as well as the width of the instrument and the angle of its posterior curve, suit the case. This is now introduced into the vagina in such a manner that the short arm with its bow lies against the upper portion of the posterior wall of the vagina, that the fulcrum rests upon the floor of the pelvis, and that the front bow lies loosely under the bladder. Upon allowing the patient to rise, the uterus and broad ligaments will now receive the full force of the intra-abdominal pressure, which being communicated through the bladder to the front bow, will keep the posterior wall of the vagina upon the stretch, and by that means the uterus in anteversion. The greater the pressure, the greater the anteversion. This mode of proceeding is certainly theoretically correct, but practically not as simple as it may appear. The pessary, when correctly shaped and properly applied, should lie in the vagina without causing any undue pressure anywhere, and should not be wider than to allow the examining finger to pass freely between it and the sides of the vagina. The length of the short arms depends upon the degree of longitudinal stretching the vagina will bear, and that of the long arms upon the distance from the spot where the fulcrum will rest, to the spot where the intra-abdominal pressure is most distinctly perceivable. The angle at the fulcrum, or the posterior curve, must be such that the posterior bow, when the pessary is placed and the patient made to strain downward, presses against that portion of the upper posterior vaginal wall just below the lowest point of peritoneum, while the front bow lies loosely under the bladder, without touching the symphysis pubis or urethra.

¹ Wilhoft: Ist das Hodge'sche lever pessary ein Hebe- oder ein Hebelpessar? Is Hodge's "lever pessary" an elevating or a lever pessary? (*Arch. f. Geburtsh. u. Gynaekologie*, Vol. III., p. 389.)

After having given the principle and practice *in nuce*, it will perhaps be well to give some practical hints, attention to which may save beginners a great deal of annoyance, and their patients an amount of unnecessary suffering. Supposing a retroverted or prolapsed uterus replaced and a pessary inserted, the patient should be examined in the recumbent and standing position while she is straining downward, in order to see whether the vaginal support answers its purpose perfectly. If it does, we will find the os uteri externum pointing to the sacrum, and the fundus lying forward over the bladder; the pessary will allow the examining finger to pass freely on either side of it; the posterior bow will touch the upper portion of the posterior vaginal wall, without, under the greatest abdominal pressure, coming too near the cervix uteri; and the front bow will lie loosely under the bladder, without touching the symphysis pubis or urethra. This being done, it is well to test the length of the short arms of the pessary by making the patient sit down on a hard chair. If she, in dropping herself in the seat, experiences no pain or uneasiness, we know that these arms are not too long. The effect of a properly shaped pessary, correctly applied, is almost instantaneously appreciated. The backache, heaviness in the lower part of the abdomen and in the lower extremities, and the sensation as if "everything is going to fall out," should disappear at once, and the patient should not be conscious of the presence of the instrument, excepting by the relief it affords.

Even if these results are reached, it is my advice to examine the patient *daily*, regardless of the favorable report she may make, until after a week or so there is not the slightest doubt that, following her daily avocation, the womb and the pessary remain in the proper position. The pessary is left in the vagina for an indefinite period, if pregnancy should not intervene, in which case, however, it should be removed after the third month of gestation is completed. During the time a pessary is worn I direct twice daily vaginal injections of a quart of water of from 100 to 110° F. by means of a fountain syringe No. 2, and if possible see the patient once a month for the purpose of examination. After the uterus is replaced, its circulation, which necessarily was interfered with, becomes free, and as by this means size and weight of the organ

become changed, the pessary may require a different shape. The simplest cases of backward displacement of the uterus are, of course, those which are recent and which have not yet been under treatment. But such cases are rare, and those with all sorts of complications are the rule, especially since everybody "tries pessaries" in his own way, until their patients, feeling no better, but considerably worse, agree with their doctor "that they cannot bear pessaries." In these latter cases we find now every conceivable complication, of which we will only consider those which, together with others, seem to be an obstacle to the use of our pessaries. One of the most common complications consists in great tenderness around the cervix in the vaginal vault (perimetritis and parametritis), which is sometimes produced by the pressure of a badly or improperly shaped pessary against the cervix uteri or its immediate vicinity. In these cases I find the following plan the most successful. I replace the uterus with the hand gently, keep the patient in Sims' position, apply hot poultices to the region of the uterus, inject the vagina very frequently with water as hot as it can be borne, until the urgent symptoms have subsided, and then insert a pessary the short arms of which are somewhat low and the posterior curvature tolerably shallow. After a few days more of rest in bed, the patient may be allowed to rise, and as the tenderness decreases, the length of the short arms may be gradually increased, until we have the uterus in the normal position.

The next complication are adhesions. If these are small and their attachment low down, as felt per rectum, it will be worth the while to apply a pessary with shallow posterior curve for the purpose of gradually stretching them, until from continued attenuation they yield.

Prolapsus of one or both ovaries is no contraindication to the use of the pessary, inasmuch as the latter, when intelligently applied, will support them perfectly without pressing upon them. Lateral retroversions are sometimes very troublesome. After the uterus is replaced and held by the pessary, it still lies eccentrically and pressing against one corner of the posterior bow of the pessary only, instead of bearing upon the whole of its surface, displaces the entire instrument sideways, and resumes its former pathological position. To overcome this tendency,

I replace the uterus as usual, and hold the cervix in the centre by placing tampons of carbolized cotton between it and that short arm of the pessary to which it has a tendency of falling, and find this treatment invariably successful when *daily* carefully attended to.

In connection with prolapsus and procidentia uteri we invariably find more or less prolapsus of the walls of the vagina (prolapsus vaginae anter., prolapsus vaginae posterior, and inversio vaginae, with vesicocele and rectocele). This condition is by most authors considered the usual cause of prolapsus and procidentia uteri; but, I think, erroneously. As long as the uterus lies in anteversion, the intra-abdominal pressure acting upon its posterior wall, and as long as the ligamenta utero-sacralia serve in holding the cervix uteri backward, it is hard to understand how the prolapsed vaginal walls can pull the uterus, first into the axis of the vagina, and afterwards out of the body. My idea on the subject is the following: The uterus can only descend into the vagina when, from some cause or other, the intra-abdominal pressure falls upon the summit of its fundus or upon the anterior surface of the womb. Under this pressure the ligamenta utero-sacralia, naturally not very strong, must yield, allow the cervix to come forward, and the same force continuing in operation, gradually depresses the womb into that position which we call retroversion. At this time the bladder has, on account of its attachment to the uterus, already been considerably displaced downward, and the cellular tissue in this neighborhood has undergone a great deal of stretching. Now the intra-abdominal pressure, reinforced by the rectum, will drive the uterus forward and downward until we finally have procidentia uteri, complicated, of course, with cystocele and rectocele, because the bladder is dragged along by the uterus, and the recto-vaginal septum by the vault of the vagina. That this is the way in which rectocele and vesicocele are produced is also proved by the fact that our plan of treating backward displacements is eminently successful in these complications. In cases of this sort with ruptured perineum, our method is of course not applicable, because the main natural support of the uterus is wanting. But after the perineum has been restored by operation, I replace the uterus as usual, and hold it in ante-

version by means of a proper pessary. The necessary stretching of the posterior vaginal wall to produce anteversion at once does away with the rectocele, and the high position of the uterus lifts the bladder, which is besides supported by the front bow of the pessary.

In speaking of the manner in which backward displacements of the uterus are produced, we only so far considered these displacements as affecting the entire organ, and must, therefore, now direct our attention to those cases in which the cervix is very nearly in the proper position, but the fundus thrown backward, causing a more or less acute angle at the internal os (retroflexion). The same causes which, as before described, will produce retroversion in women with strong and healthy uteri, are the cause of retroflexions in women whose uteri are feeble and flabby. The intra-abdominal pressure falling upon the anterior surface of a flabby fundus uteri, will only depress this portion of the womb backward farther and farther, until, after descending low enough, the ligamenta utero-sacralia yielding and the loaded rectum pressing upon the fundus, this latter displaces the cervix forward. Patients, in whom a retroflexion is plainly recognized, should at once be treated, because the case, if left alone, can only get worse, and may finally result in an infirmity which may be beyond our means. In some cases, especially in recent ones, we may succeed by means of our simple pessary in lifting the posterior cul-de-sac sufficiently high to throw the fundus forward enough to allow the intra-abdominal pressure to act upon its posterior surface. If we succeed in doing this, it is all that we can care for, provided the pessary remains in the position in which it is placed, and really keeps the fundus forward. But according to my experience, there are a great many retroflexions in which this plan does not succeed, and in which we must resort to other means, which are based upon the following principle: We make a retroversion out of the existing retroflexion by means of an intrauterine pessary and then replace the retroverted uterus with this instrument in it, by means of one of our pessaries. In the hands of an expert operator, this simple plan can be almost free from danger, but it requires as much good judgment and discrimination and as high a degree of mechanical skill as any surgical operation. The examination

of the case must first of all be very thorough indeed, for we must know whether the uterus is perfectly movable, and whether the peri-, para- and endometrium are healthy and free from inflammation. The mobility of the uterus, as well as the condition of the peri- and parametrium are easily tested by a gentle attempt at replacing the uterus, while stretching the posterior vaginal wall longitudinally. Tenderness of almost any degree around the womb precludes the intrauterine pessary and must be removed first by the proper treatment. The condition of the endometrium is found by the careful use of the uterine sound. If, during its presence in utero, the instrument being of the proper temperature, there is more or less pain experienced, the intrauterine treatment should be postponed until by proper means the irritable condition of the mucous membrane has so far improved that it bears the sound well. In those cases in which the cervical canal is very narrow, we may, before proceeding further, have to dilate this canal. For this purpose we prefer Kammerer's or Peaslee's sounds to any other dilator. This being done, we measure the depth of the uterine cavity carefully, and having selected an



FIG. 2.—Intrauterine pessary of hard-rubber.

intrauterine pessary (Fig. 2), the stem of which is at least one-quarter of an inch less in length than the depth of the respective uterine canal, we insert it into the uterus. In multiparæ the little hard-rubber instrument is usually easily introduced with the fingers up to the os internum, where the flexion exists, and gradually pushed forward by raising the fundus uteri by means of two fingers of the other hand either per vaginam or rectum, while the point of the pessary is directed downward. In nulliparæ, with narrow vaginæ, we succeed best by using the instrument Fig. 3, upon which the intrauterine pessary fits. With one finger of the left hand under the cervix, we easily introduce the instrument up to the flexion and pass it through, by raising the fundus and at the same time depressing the

point of the instrument. Any force used in pushing the pessary by the flexion is uncalled for, inasmuch as it passes easily as soon as the body of the womb is really straightened. The little instrument is now slipped off from the holder and left in utero. If in a given case we are *perfectly* certain that the peri-, para- and endometrium are entirely free from inflamma-

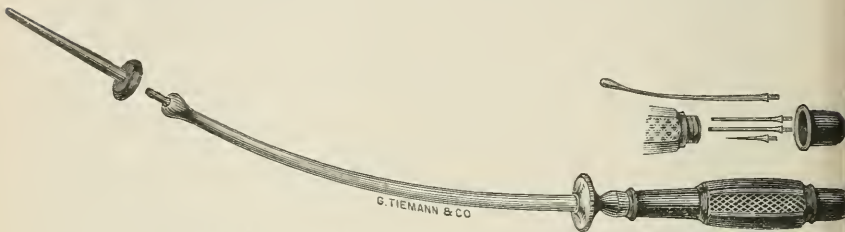


FIG. 3.—Stem pessary holder, devised for the purpose of introducing intrauterine pessaries and sponge tents; may also be used as uterine sound, etc.

tion, we may *at once* replace the uterus in the manner before described, and hold it by our vaginal pessary, the posterior bow of which, under the influence of the intra-abdominal pressure, should not possibly cause undue pressure against the

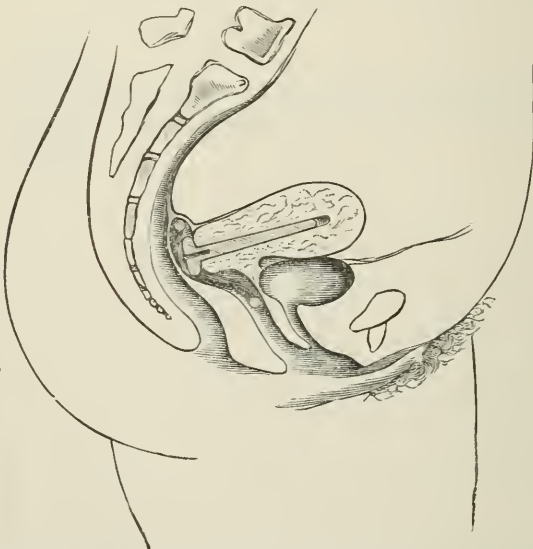


FIG. 4.—Section of a pelvis, in which the vaginal pessary supports the uterus, which is being straightened by the stem.

cervix or its immediate vicinity (Fig. 4). As a rule it is the safest plan to introduce the intrauterine pessary at the home

of the patient, and to keep it in situ pro tempore by a few tampons of carbolized cotton. If after a few days, at our *daily* visits, no signs of irritation are found, we may replace the retroverted womb and insert the vaginal pessary, ordering the patient to remain in bed, in Sims' position, for a few days longer. If at this time the patient is found free from irritation, she may be allowed to resume her daily occupation. Now vaginal injections, as advised before, should be used daily, and the intrauterine pessary should be left in position even during the catamenial flow, during which the patient will usually be perfectly free from menstrual colic. The amount of flow, however, is, as a rule, increased by the presence of the intrauterine pessary.

This mechanical treatment should now be aided by such means as, in each individual case, may be considered appropriate to build up the general system. About the length of time that the intrauterine pessary should be worn, we cannot give any definite rule, as we have seen cases, in which symptoms of hysteria and dysmenorrhea reappeared after the intrauterine stem, having been steadily worn for twelve months and more, had been removed for two or three months. On the other hand, we have known the uterus to retain its proper shape after the instrument was removed, it having been used only five or six months, and in two cases pregnancy occurred during the time the intrauterine and vaginal pessaries were in position.

Concerning intranuterine treatment and its dangers, gynecologists are nearly unanimous in the opinion that it should be intrusted only to the hands of gynecologists. The danger depends greatly upon the operator, who must of course be skilled, and upon the method of operating. With sufficient experience and skill in gynecological operations, and a proper amount of care, we believe our plan of treatment comparatively free from danger. The little hard-rubber stem, straight,¹ light, and highly polished as it is, can cause but little, if any, irritation, if the case is well selected or, more properly expressed,

¹ We are aware that, from the anatomical point of view, objections may be raised against the *straight* stem, because the uterine canal is curved. But inasmuch as the intrauterine pessary may and does rotate in the cavity, the point of a curved stem may impinge upon the uterine walls, and may become the cause of irritation and inflammation.

well prepared. If we now have learned to replace a retroverted uterus and to fit a vaginal pessary (like the dentist fits the plate of a set of artificial teeth to the gums), according to the rules and precautions given above, we really think there is little danger, excepting that arising from unskilled manipulations. After the vaginal pessary is placed, the intrauterine stem cannot possibly slip out of the uterus, because its bulb rests against the recto-vaginal septum, and the womb is perfectly free to move in any direction that this organ should be able to do in health. To limit the physiological mobility of the uterus by contrivances in which intrauterine stem and vaginal pessary are fixed to one another, whether by gum-elastic or otherwise, is to lay the foundation for continual irritation and trouble, and is, to say the least, unscientific.¹ All foreign bodies in the vagina and womb must act as irritants more or less, but if our plan of treatment is properly executed, the irritation produced will not be worth mentioning. Even with the intrauterine stem added to the vaginal pessary, the menstrual flow is not impeded, coitus not prevented, and cleansing injections can be used as well as ever.

Already before the close of our last war (1865), we had been in the habit of altering Hodge's pessaries, of which only six or eight sizes were in the market, to meet the requirements of each case as nearly as possible; but with such a small variety of sizes it was impossible to suit every case. We felt that a pessary should be made for each individual case, and that the physician should be able to do this with his own hands, in order to reach the highest degree of success. But the question was, how to get a material which could be worked and moulded into any shape by a physician, and which had all other good qualities (durability and lightness). We tried everything that suggested itself, copper wire covered with pure gutta percha, block tin rings, etc., etc., until we learned how to work hard-

¹ We were astonished to find the following, evidently careless remark, in the latest (4th edition, 1879) of Schroeder's *Krankheiten der weiblichen Geschlechtsorgane*, p. 151: "welches (the vaginal pessary) man auch mit dem Intrauterin pessarium verbinden kann," which (the vaginal pessary) may also be connected with the intrauterine stem. In his 3d edition (1877), he teaches to hold the straightened uterus, with the intrauterine stem in it, in anteversion by tampons of cotton, and mentions our method, as here described, in brackets (page 172), but does not once speak of connecting the vaginal with the intrauterine pessary.

rubber. This material is beyond a doubt the best for our purpose; but when we consider that we may wish to alter a pessary several times during each sitting, while fitting it to our patient, and that the hard-rubber pessary has to be heated in the flame of an alcohol lamp, bent and cooled each time, the method must appear tedious and even laborious. To avoid this trouble, we are in the habit of making temporary pessaries of a different material, and of replacing these, after having convinced ourselves of their proper shape and size, by

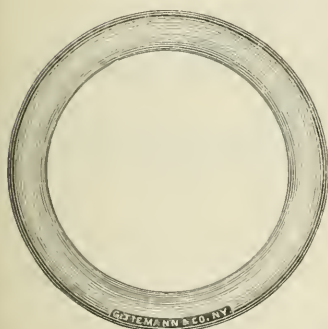


FIG. 5.

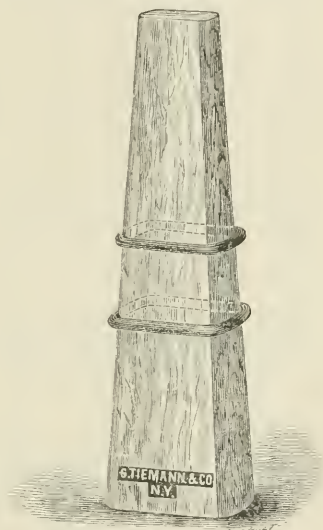


FIG. 6.

FIG. 5.—The ring of which the pessaries are made ($\frac{2}{3}$ natural size).

FIG. 6.—The wooden block over which pessaries are formed is about 16 inches high, and a section of it taken at any height of it has the annexed shape.

a permanent facsimile in hard-rubber. At our suggestion, George Tiemann & Co., of New York, have succeeded in preparing the material for our temporary pessaries. It consists of rings made of the best copper wire (No. 14), soldered with silver and covered with pure gum-elastic of considerable thickness. The gum used is an imported article and never becomes foul or brittle. Of these rings (Fig. 5), a set of 17 are made, the external diameters of which run in inches as follows: $1\frac{1}{2}$, $1\frac{5}{8}$, $1\frac{3}{4}$, $1\frac{7}{8}$, 2, and so on to $3\frac{1}{2}$ inches. Having selected one of these rings of the requisite size, we pass it

over our block, Fig. 6, which has been soaped previously, as far as it will go, continually pressing the ring to the circumference of the block until it, fitting snugly all around, sits perfectly horizontal. On pushing it off the block, our ring has now the shape represented in Fig. 7, the upper bow of which will form the end of the short arms, and the lower one that of the long arms of the pessary. The next step is to give the instrument the posterior curve. This is done by gradually bending it with its flat surface over a stick, an inch in diameter. The pessary will now resemble in shape either A, A' or A'', Fig. 8. Of these shapes A'' is the weakest and A the strongest lever, because in A'' the angle (posterior curve) formed at the fulcrum F is the greatest and in A the smallest, the length of of the arms being the same in either. The smaller curve at



FIG. 7.

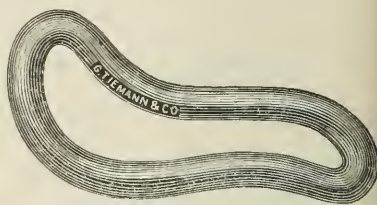


FIG. 9.

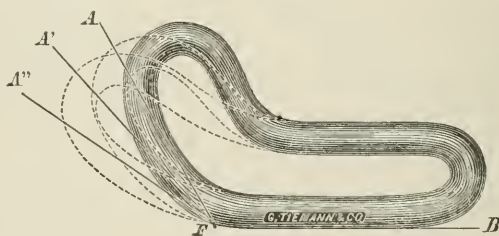


FIG. 8.

FIG. 7.—A ring which has been shaped over the block (blocked ring).

FIG. 8.—The blocked ring with the posterior curve. A F, A' F, A'' F are the short arms, and B F the long arms. F the fulcrum.

FIG. 9.—Blocked ring with posterior and anterior curve (finished pessary).

the end of the long arms is made by reversing the instrument, holding the front bow over the edges of a square table and bending it downward (Fig. 9). This set of seventeen rings would, in this manner, only give seventeen sizes of pessaries, each of which may differ from the other one only on account of the different curves. This is not a sufficient variety of size, and we

will frequently have to decrease or increase the width of the pessary, by increasing and decreasing the length of the arms, making up the difference by placing the anterior curve more forward or backward, as the case may be. In this manner an innumerable variety of shapes and sizes of pessaries can be made out of this set of seventeen, so as to enable us to fit any case that may come up. The fitting of a pessary cannot be taught, but it can be learned by patient trials,¹ during which the theory before laid down is continually kept in mind. These pessaries answer all purposes, and when properly fitted cause no irritation, but we object to them as *permanent* instruments on account of their flexibility. In case the removal of the pessary should be necessary, or in case the instrument should be displaced, the proper shape of the pessary, which may have required a great deal of time and pains to find, will almost certainly be lost if any one except an expert is called upon. We have seen enough of this and could narrate some curious observations. For this reason we never permit a patient to go away for a long time with a temporary pessary, but always make a facsimile of hard rubber, after the temporary pessary, after we have satisfied ourselves during four or six weeks that its present shape and size are just what is wanted. The hard-rubber rings of which the permanent pessaries are made are also manufactured in seventeen sizes by Messrs. Geo. Tiemann & Co., either round or in the shape of Fig. 7. To most practitioners the latter form will be more convenient, inasmuch as, by procuring these, the labor of bringing the round rings into this shape is saved. In order to block a round hard-rubber ring into the above shape, we throw it into a shallow dish of linseed oil, which latter has been brought to a boiling heat by means of a spirit lamp. As soon as we feel by means of a wire hook, with which we intend to remove the ring from the oil, that it has become sufficiently soft or pliable, it is removed and put over our block Fig. 6. To do this we wear a pair of thick, woollen gloves to avoid burning our hands. The ring is now gradually pressed downward (it is very easily burst) until it, fitting perfectly all around the block, sits perfectly level. After holding its sides to the block for a few minutes, it will have cooled sufficiently

¹ Thomas A. Emmet, loc. cit.

to retain its shape while being pushed off the block into a bowl of water. The degree of pliability to be produced by the hot oil, as well as the amount of force to be used in pushing the hot ring over the block, can be learned by practice only, and no one need believe that he will get along without burning and bursting some of his rings. To be able to block hard-rubber rings well is of great importance in practice, because we are able to make of *one-sized* round rings, blocked rings of *different* dimensions. This is done by shaping them over different blocks, a section of which differs from one another in length and width. The greater the length of the section the smaller its width. Rings already blocked may, if the dimensions do not suit, be reblocked indefinitely. The rest of the work in making a permanent pessary after the model of a temporary one is done over a spirit-lamp. By gradually heating a blocked ring of the proper width, from its centre to the neighborhood of the posterior bow, the instrument being continually moved over the flame, it will become so flexible that it can be easily bent over a polished round stick, an inch in diameter, to give it the posterior curve. After having cooled the instrument in water, we heat the long arms in the same manner, and produce the anterior curvature by depressing the front bow over the sharp edge of a square table. In width the pessary should now be perfect, but the length of its arms and the shape of its curvature may yet require modification by reheating.

We are aware of the fact that a number of physicians will think all the trouble to make a pessary just described, to say the least, uncalled for. This is, of course, their individual opinion and must be taken for what it may be worth. On the other hand, we are glad to know that there are in our country as well as in Europe a few gynecologists who are convinced of the fact that only a perfectly fitting pessary can do good, and that to fit a pessary scientifically is an art which cannot be acquired by everybody. Practitioners who do not understand this art can, of course, have no success in the treatment of uterine displacements, and will injure the reputation of one of the most valuable methods of treatment in two ways. Either they do not use pessaries at all, pretending that they are useless (sour grapes), or they use them in such a manner

that the patients become afraid of them, on account of the pain and suffering they produce. The patient blames the pessary, not the doctor, and the latter will in all probability not make her any wiser. Supposing a lady suffering with continual backache, bearing down in the lower abdomen, frequent desire to urinate, and inability to walk, besides complaining of all sorts of hysterical symptoms, under the treatment of a physician of high standing in the profession, but who does not understand this art. What will become of the case? The doctor will do all he can, of course, and if after months and perhaps years his treatment has done no good, the patient will consult another physician, who, finding the *causa morbi* in a *retroversio uteri*, replaces the uterus, holds it by means of a pessary in anteversion and—*from that moment* there is an end of backache, of bearing down, of irritation in the bladder, and the patient is again able to walk. Results like this are very common, and we do not hesitate to state that the modern treatment of backward displacements of the uterus, although, on account of certain complications, in many instances very troublesome, yields the most gratifying results ever obtained in medicine and surgery, because the backward displacements are the cause of far more constitutional disturbances than is generally believed. And yet it appears to us that these disturbances are a natural consequence of such displacements. A displaced organ (in our case, the womb) is bound to suffer from disturbed circulation. Disturbance in the circulation leads to imperfect nutrition of at least some parts of the organ affected, and this to pathological changes in its tissues (congestion, inflammation, and hypertrophy). As the uterus is passing downward in the vagina, it pulls with it, as we have shown, the bladder. This organ by its displacement becomes itself irritable, and may not be able to empty itself properly because one portion of it is drawn too low down. The urine left in the bladder becomes ammoniacal, and we may now have all the degrees of irritation or even inflammation and sloughing of its mucous membrane. After the uterus has fallen backward sufficiently low, it may cause undue pressure upon the sacral plexus, not by its own weight alone, but by the intra-abdominal pressure acting upon it. This pressure preventing perfect nutrition, produces heaviness in one or both lower extremities,

sometimes amounting to partial paralysis and neuralgia, and by reflex action may even affect one or both arms in the same manner. By means of reflex action produced by disturbed nutrition of some of the nerves of the pelvis, we also explain the functional derangements of the brain and nervous system, lungs, heart, stomach, and kidneys, which are usually covered with the one name—hysteria. And we do so with propriety, because every day's experience shows us that, in cases of backward displacements of the uterus, in which we succeed in replacing and holding the uterus in anteversion, certain symptoms, as backache, bearing down, heaviness in the legs, and frequent desire to pass water, are at once relieved, and that all other hysterical symptoms, when the uterus remains in that position, gradually disappear. As soon as the womb is in its position again, frequent vaginal injections of hot water will aid in restoring free circulation in its tissues, and by that means improve their nutrition. We therefore postpone all treatment directed to the cervix for endocervicitis, erosions, congestion, etc., until we have succeeded in replacing the uterus to its normal position, and have found that we succeed better and quicker.

In conclusion we will perhaps be pardoned for giving a few cases of backward displacement of the uterus which appear to us of sufficient interest for publication.

I.—During my stay in Hamburg (summer, 1878), I was requested by Sanitätsrath Dr. Andresen, director of Sophienbad in Rheinbeck, to see with him one of his patients. Mrs. H., wife of a Hamburg banker, multipara, and about 36 years of age, was highly hysterical, and unable to walk. She was obliged, in order to enjoy the beautiful grounds of the institution, to have herself moved about in a rolling-chair. In this case there was lateral retroversion of the uterus, and the fundus of the latter was pressing upon the sacral plexus. As soon as the uterus was replaced and supported by the pessary, which succeeded at once, she could walk, but inasmuch as there was for a few weeks a tendency of the pessary to become displaced, she was able to walk when it was in proper position, and unable to do so when it was not. At the time I left the city, she was getting along well. This was about ten months ago. About two months since, I was informed by my friend, Dr. L. Prochownick, of Hamburg, formerly assistant of Prof. Schatz, that my patient had consulted him; that he found the pessary displaced (coitus, vaginal syringe), that he replaced the same, and that she was doing well.

II.—Mrs. Ph., of McComb City, Miss., near 40 years old and mother of several children, the youngest of which was 13 years of

age, presented herself with the usual symptoms of backward displacement, to which was added terrible suffering in the bladder. Upon examination, I found prolapsus uteri with slight vesicocoele. The region over the bladder was very painful under light pressure, and touching the vesicocoele produced the most intense agony. She passed urine every hour of the day and night, and sometimes had to be made to leave the vessel by force. Replacing the uterus gave immediate relief to the usual symptoms, but it required an immense deal of work and patience to fit a pessary in such a manner that, while it sustained the uterus well, it at the same time supported the inflamed bladder without causing enough pressure to irritate this organ. Besides the pessary and perfect rest in bed, in Sims' position, hot poultices to the region of the bladder were ordered, and this organ was washed out several times daily with a solution of common salt in water, as hot as it could be borne. Mrs. Ph. improved from day to day, until she was discharged in good health. But when, after months, she for some reason or other removed the pessary herself, the bladder trouble, together with the usual other symptoms, made their appearance again, and were promptly arrested by readjusting the vaginal support. She continues well.

III.—Mrs. F., of St. Georg, Hamburg, a patient of my friend, Dr. Goetze, suffered from pain in the left hip and weakness in the left leg, which prevented her from walking, in addition to the usual symptoms of backward displacement. On examination, we found lateral retroversion of the uterus to the left. As soon as the uterus was replaced, she was free from pain and could walk well, but as soon as the pessary was displaced, as it so frequently happens in latero-versions, the same old symptoms recurred at once. Besides this displacement of the uterus, there was another trouble. Her right eye was always inflamed, and she was unable to raise the eyelid (ptosis). On account of this symptom only, I mention the case here. When at our visits we found the right eye open and the inflammation decreased, we invariably found the pessary and uterus in proper position, and *vice versa*. A few days after we had found the exact shape of the pessary required, the eye was perfectly well and remained so.

IV.—Mrs. B., of Hamburg, mother of several children, and a poor, hard-working woman, was treated by my friend, Dr. Aug. Classen, for amaurosis of the right eye, who, being convinced that the patient suffered also from some displacement of the uterus, requested me to see her with him. I found lateral retroversion to the left, applied a pessary, and on the next day at our visit we found the diseased eye so much improved that she saw quite well with it, while on the day previous she could not use it at all. In this case also, the condition of the eye was a certain index of the proper or improper position of the uterus. The uterus in this patient was so flabby that, to hold it in position in the median line, we had to apply an intrauterine pessary. At the time when I left Hamburg, she was doing well.

V.—Mrs. W., of Hamburg, mother of two children, had not been in good health since her last child-birth. She had almost all the symptoms of backward displacement of the uterus, among which complete stiffness of the left knee was the most prominent. Several days after her last confinement, she had been taken with severe pain in the left leg, and in spite of all treatment, this only gradually passed away after weeks. When she made the first attempt to leave her bed, she found she could not bend her knee, nor put the heel down upon the ground. When I saw her, the leg was extended and perfectly immovable in the knee-joint. Upon examination, per vaginam, I found a large, heavy uterus in retroversion. Immediately after the uterus was replaced, she expressed herself as feeling much better every way, especially in the left leg, the heel of which she could now put to the ground. But the knee was so stiff that I could not move it even by main force. In a few weeks afterwards, the knee also improved, and when I left Germany, five weeks after the pessary was placed, she was able to bend her knee to a considerable degree, and to walk all about the city without stick or any other assistance. This case was also seen by Drs. Classen, Goetze, and other medical friends.

VI.—Mrs. M. M., of Yazoo City, Miss., had been treated by me for retroversion, and had been sent home in perfect health wearing a pessary. About a year afterwards she returned for advice concerning her left arm, in which she suffered from neuralgia in such a degree that she had to be under the influence of some narcotic, in order to get relief. Having been in good health all along, she felt one day annoyed by the pessary, as she thought, and thinking it displaced, and not being able to rectify its position, she removed it. She now felt better, until one day, in company with other ladies, she ascended a very steep hill. From this time an aching sensation in the left arm and shoulder, which gradually increased, began to trouble her, for which she was treated by several physicians without relief. On examination, we found retroversion of the womb, and as soon as the uterus was replaced and held in position by a pessary, the neuralgia was gone, but the heaviness of the arm remained. Five days afterwards, as she had continued perfectly free from pain for three days and nights, and as her left arm was in every way as good as the right one, she returned home. About a month afterwards she reported herself by letter in good health.

VII.—Mrs. E. L. S., of New Orleans, a lady of about 40 years, multipara of very robust constitution, presented herself, suffering from neuralgia of the right arm and hand. She said that she had suffered more or less in this manner for two years, and had tried everything and every physician of note who had been recommended in the South, West, and East, without relief. Her arm was perfectly raw from the use of counter irritants, blisters, etc., and she could move it in all directions, but during the last two years she had not been able to write, do needlework, or even to cut her food. An attempt to write would immediately increase

the suffering. The neuralgia was agonizing and so distressing that she preferred death to living in her present condition. Upon being questioned, she said she had always been well, and did not think she had anything the matter with her womb, and would be well if this neuralgia was cured. About four or five years before she suffered from neuralgia, a gynecologist had told her that she had displacement of the womb, but inasmuch as she did not have great inconvenience from it, she had objected to the operation proposed. Upon bimanual examination, I found the retroverted uterus pressing upon the sacral plexus, and replaced the organ, the patient lying in Sims' position. While preparing a pessary to hold the uterus, the patient stated that the severe pain had left her, but that the arm was still numb. After the pessary had been fitted, and after the patient had walked around the room for some time, there was no acute pain, and she was, for the first time in two years, able to write. Two days afterwards, I was called to see the lady, and found her suffering perhaps more than ever. The heaviness in the arm had gradually increased, until the neuralgia returned with all its fury. Upon examination, per vaginam, I found the pessary displaced (probably by the syringe), but as soon as it was replaced, the pain disappeared and has not returned since. A year and a half have since passed, during which this patient has been in such complete health that, during the yellow fever epidemic of last year, she was among the most energetic ladies who so nobly provided for the sick and needy of the Crescent City.

I have selected these few cases only for the purpose of proving my assertion, that backward displacement can be the cause of great disturbance in the female economy, and especially of derangement of the nervous system, and that these are brought about either by direct pressure upon the nerves of the pelvis, or indirectly by reflex action. It would have been an easy*task, by increasing the number of cases, to have shown also that nearly all so-called hysterical symptoms may be produced by displacement of the uterus, and that *the only* proper treatment of these cases should begin with the restoration of the normal position of the uterus.

REMOVAL OF A CALCIFIED FIBROID OF THE UTERUS BY
LAPARO-ELYTROTOMY.

(WITH REMARKS.)

BY

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(With a lithographic plate.)

A CAREFUL examination of the literature shows that calcification of uterine fibroids is a malady of extremely rare occurrence. In a review of the writings from the time of Hippocrates, we find only fifty-one cases mentioned; and of these, it is questionable whether eighteen of them are not reproduced with alterations and elaborations, which so obscure their personality as to simulate different cases. We have, therefore, but thirty-three well authenticated cases. Of these, the earlier were simply reported as uterine stones, leaving us in doubt whether they were all of calcareous or osseous formation.

At present there is a marked difference of opinion among authors as to the real change. Some assert that the result is always *calcification*; while others, who are just as competent to judge, admitting the truth of this in the majority of cases, yet claim to have unmistakable evidence that *ossification* does take place in some cases.

Cruveilhier considers the great majority of the so-called uterine stones to be ossifications. Their smooth muscular fibres have been clearly and distinctly shown by Bidder, Waller, Vogel, Lebert, Ferrir, Oldham, and Barnes. The researches of these men extend over a period of twelve years (from 1842 to 1854) and are incontrovertible.

Virchow, Foerster, and Rokitsansky claim to have found the same indisputable evidence of *calcification*.

Amussat, in 1829, obtained a uterine stone from the body of an old woman who died in the hospital Salpêtrière; this Henocque examined, and found by macerating in nitro-muriatic acid,

thus removing the salts of lime, that there remained fine bundles of muscular fibres, interspersed with well-defined fat-cells.¹

Thus we find prominent observers at variance upon the subject; some with Gusserow positively asserting that "a uterine stone is always a calcified fibroid," while others with Freund have found ossified fibroids.

It remains for future investigations to decide this interesting and important question in relation to the morphology of these rare formations, and to determine which assertion is correct, if only one; and if both are true, to decide the cause of the different results.

However widely different the opinions of experts may be on the subject at present, and however dogmatically an assertion may be made, the preponderance of evidence of actual experience of able and conscientious men must have much greater weight in argument than pure theoretical or pedantic assumption.

My own experience in only a single case is in proof of calcification.

I was called April 1st of the present year to see Mrs. R., multipara, 42 years of age, in consultation with Drs. Seele and Lee. I found the patient complaining of weight in pelvis, pain in back and loins, and troubled with copious hemorrhage. Examination showed uterus enlarged to the size of pregnancy at the fifth month, and lifted above the superior strait. Os patulous, and a copious sanio-purulent discharge constantly escaping therefrom. Upon inserting the finger into the os, it passed through a mass of coagula and encountered a semi-solid, granular mass, of peculiar appearance. Sound entered with some difficulty, giving a sensation of coming in contact with calcareous matter, and giving rise to copious hemorrhage. Further examination convinced us that we had encountered the anomaly of a "uterine stone," or calcified fibroid.

The patient was then anesthetized and an attempt made to enucleate and remove the tumor. This signally failed, and I soon became convinced that the stone was too large to remove *per vias naturales*. On consulting hastily with my colleagues, laparo-elytrotomy was decided upon. This being my maiden effort in this direction, and in fact never having seen the operation performed, and having only cursorily read the reports of Thomas' and Skene's operations, I approached the present case with some degree of awe. The hand was passed into the vagina and the relation of the parts learned. An incision was then made thirteen

¹ See abstract of this case, with plates, in this JOURNAL, Vol. VII., p. 333.

centimetres in length, extending from the anterior superior spine of the ilium to the centre of the symphysis pubis.

The epigastric artery was tied and cut, and the peritoneal fold pushed upwards out of harm's way. An incision was then made through the tissues to meet the finger in the vagina. The opening was now dilated as much as was deemed advisable, the os brought up and dilated still more, and attempts were made to grasp and remove the stone.

These, however, failed from the size of the concretion. After incising the os and dilating the abdominal wound still more, and then ascertaining the impossibility of removing the stone in this manner, a silver retractor was bent so as to conform to the curve of the uterus, and carefully inserted into the uterus between its walls and the tumor, and then with a fine finger-saw the calculus was slowly and laboriously divided and removed in halves; even then being so large that the tissues were somewhat lacerated in its removal. The uterus was then cleared of a mass of adventitious tissue which surrounded the true tumor, and which had imperceptibly merged from a simple hypertrophy of the uterine walls into a granular calcareous mass of greater or lesser density. The uterus was next replaced, the walls of the incision brought together and secured with silver-wire sutures, coated with carbolized collodion, and then covered with a layer of carbolated cotton. The vagina was then thoroughly washed out with a two-per-cent solution of carbolic acid, a large pledget of cotton saturated with carbolated oil was inserted into the vagina close up against the divided os; the patient put to bed and allowed to recover from the anesthesia. Patient stood the operation remarkably well. Shock not excessive; hemorrhage, although profuse, yet not exhausting. .07 gms. of opium by the rectum was then given, and .35 gms. quinine by the mouth. Patient rested well through the night, and in the morning was remarkably comfortable. Upon being shown the tumor, she remarked: "I have often wished during my confinements that I could lay eggs, and now I have done it." I now left the patient in the care of Dr. Seele, the family physician, who reported as follows:

April 5th.—Patient doing finely. Vaginal discharge copious and purulent, with shreds of decomposing tissue. Reaction fully established. Temp. 100° F. (37.8° C.), pulse 85. Appetite good, water high-colored and loaded with flocculent matter. Continued iron and quinine. Morphia unnecessary.

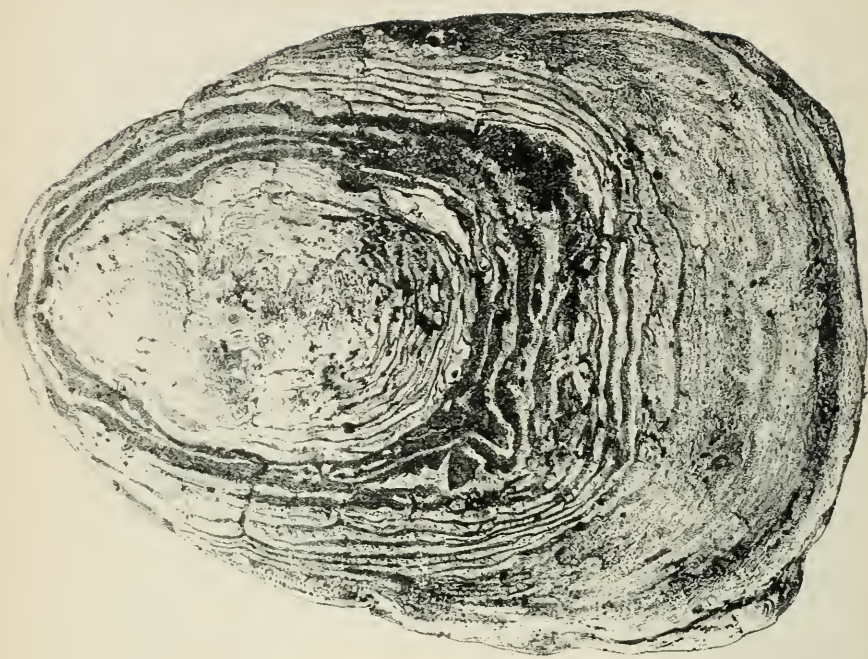
April 9th.—Patient improving, but strong urinous smell to secretion from vagina: rinsed out vagina and uterus with solution of carbolic acid and tannin.

April 14th.—Patient convalescing rapidly. Incision healed by first intention. Involution of the uterus slow, but satisfactory.

The discharge gradually lessened, and the urinous odor disappeared on the 10th or 11th.

The tumor proper, after removing the surrounding soft mass,

Fig. II.



SECTION

Fig. I.



measured seventeen centimetres in its longest diameter and twelve centimetres in the shorter, and weighed 2.04 kilograms.

The tumor is composed of a solid mass of phosphate, carbonate, sulphate, and lithate of lime; with interstitial fibres of muscular and fibrous tissue, mingled with albuminous shreds, connective tissue, fat-cells, etc.

Although upon a superficial view of the external and more especially the cut surface of this specimen (a lithograph of both aspects being given) one would unhesitatingly pronounce this growth simply a concretion—and in fact the concentric layers or shells of different-colored calcareous deposit would tend to confirm this theory—but on macerating a portion in nitro-muriatic acid, and placing it under a microscope of 500 diameters, it presents the undoubted evidence of muscular fibres with fat-cells, and undissolved crystals of the salts of lime. The quantitative analysis which I have made of this tumor gives:

Calcic carbonate,	.	.	.	.	.49
“ phosphate,	.	.	.	.	.29
“ sulphate,	.	.	.	.	.13
“ lithate,	.	.	.	.	.05
Undetermined organic matter,	.	.	.	.	.04
Per 100 grms.					

The surrounding magma was composed of hyperplastic fungosities of the uterine mucosa, packed closely with calcareous granules, from the size of fine sand to that of a pea, deposited more closely around the tumor, and gradually shading off towards the periphery.

There were estimated to be two or three kilograms of this tissue surrounding the tumor.

All the numerous instances of removal of uterine fibroid through the abdominal walls have thus far been operations known under the name of laparotomy. Not a single instance of laparo-elytrotomy for the removal of a uterine fibroid is reported; I think, therefore, that I can justly claim priority to this operation for this purpose. It is true that laparo-elytrotomy has been performed in this country eight times, by two men (Thomas and Skene), and in every case for the removal of a child which could not be delivered through the deformed pelvis. My claim to originality then consists in being the first surgeon on record who has performed laparo-elytrotomy for the removal of a uterine stone, and the third on the American continent to have performed the operation for any purpose. I trust I may be excused for feeling some elation over the success of this operation, although perhaps deserv-

ing no especial credit for the conception of the process, for that was in fact the only resource except laparo-hysterotomy, which in this case would have been certainly fatal through hemorrhage from the flabby uterus.

The first author who mentions these degenerations with any degree of authenticity is Hippocrates, who relates the case of a Thessalian *maid* of sixty summers, who during her younger years suffered great pain during intercourse. No complete history of the case is given, but we learn that, after having partaken freely of leeks upon one occasion, she was seized with intense uterine pains, which ultimately resulted in her being delivered of a rough stone, the size of a child's head.

Salinus records the case of an old nun, who after suffering the most intense pain for many months, was finally delivered of a stone, the size and shape of a duck's egg.

Paracelsus gives the history of seventeen cases where women were delivered of hard bodies, which, in spite of his somewhat visionary style, we are led to conclude were uterine stones.

Later, Louis mentions eighteen cases which had been tabulated previous to 1750. Velpeau saw three cases during his long and successful career. De Coze removed a calcified fibroid with the obstetric forceps, which was followed by fatal hemorrhage. Arnotte mentions a case, and Courty reports a post-mortem case where a stone of ten kilograms was removed from the uterus of a woman who had died of hemorrhage following a fall. Duncan reports a similar case, and Arnotte another weighing over ten kilograms, which caused a rupture of the intestines, peritonitis, and death. Säxinger found a stone the size of a child's head which with much difficulty he seized with the forceps and delivered, producing extensive lacerations resulting in peritonitis and death.

Dr. Böhm, of Gunzenhausen, obtained a calcified fibroid of five kilograms in weight from the body of a nulliparous woman who had died of marasmus. The history of this case was obtained for thirty years. This tumor was encapsuled in the left abdominal region; it measured thirteen inches in its longer and eight inches in its shorter diameter. The texture was so dense and compact as to be susceptible of a high

polish. It was of pure calcareous nature, the organic tissue having been entirely absorbed. Its external aspect was not as dense as the centre, and resembled coral. It had encroached upon the bladder to such an extent as to have caused the deposit of a calculus in that viscus. Demarquay and Lisfranc each report calcified fibroids which had penetrated the bladder from the uterine walls. McClintock also saw a case in which a calculus, arising from the anterior wall of the uterus, had forced its way into the bladder, producing symptoms of cystic calculus.

Dr. Pearson Chapman, of New York, saw a patient who was suffering from excessive and uncontrollable hemorrhage which continued until death ensued. At the post-mortem examination it was found that the os was so shrunk as to admit with difficulty a fine probe. The ovaries and surrounding parts were normal; but the entire uterus was a mass of calcareous degeneration, measuring nine centimetres in its longer and six centimetres in its shorter diameter; pear-shaped in form, and showing a small orifice which represented the os.

Krauss reports finding a pyriform osteoid tumor occupying the entire space between the rectum and bladder, nearer the right side; the vaginal portion shading off into a cartilaginous formation; but no remains of the os could be found. The ovaries and ligaments participated in the ossification, but were shrivelled and atrophied. On section, the tumor presented the aspect of true osseous structure of irregular formation, more compact in some parts, while in others more cancellated. In the posterior portion of the uterine cavity was found a medullary space three centimetres in length, with jagged walls of coarse, osseous lamina, interspersed among the softer tissues. Upon this subject perhaps I can do no better than to translate Gusserow in extenso. He says:

“The last stage of the retrogressive metamorphosis which is closely connected with induration is calcification. By this process, the tumor is checked in its growth, and for a time becomes stationary, then gradually atrophies. The whole process is the impregnation of the connective tissue with the salts of lime. It is in fact an analogue of petrification. In most cases there have been found principally the carbonates, phosphates, and sulphates of lime. As such calcified fibroids are not so very

rarely extruded from the uterus, so it has been really believed that they were uterine stones which were said to have originated like cystic calculi. It is true that here and there concretions are found in the vagina which have formed around some extraneous substance (for example, pieces of bone, and more frequently around pessaries and the like) which have a sort of analogy with the formation of stones in the bladder. But the stones originating in the uterus are always calcified fibroids" (*sic*). It is remarkable that so recently as August 9th, 1874, Aviela Condura in "El siglo medico" explains all conditions under which real stones are said to be formed in the uterus, and mentions the drinking of hard water as particularly dangerous in this direction. It is still more remarkable that this Spanish work is referred to in real earnest in the *Annales de Gynécologie*, III., page 160.

The calcification itself mostly involves the connective tissue of the tumor, and so concentric layers of the carbonates and phosphates of lime are formed, but most frequently following the direction of the fibrous bundles, and much less frequently the external structure of the tumor or its capsule. Yet this sometimes occurs when the tumor is inclosed in a calcareous shell. It is, therefore, comprehensible why, when the interstitial contents of the tumor are calcified, the muscular elements, lying between them, weaken so easily and are so readily absorbed. As the calcification as well as the induration comes mostly in advanced years, it is evident that the state of the vessels of the uterus have the most influence upon the process. The more the vessels which feed the tumor atrophy or undergo atheromatous degeneration, the quicker will calcification occur.

The size of the tumor does not seem to have any influence here; there are small as well as large tumors in a calcareous condition.

Turner is of the opinion that the condition of the pedicle and its vessels are the moderating factor, without being able to establish this more distinctly. That very large tumors can calcify is notorious. Thus does Prumet describe a similar tumor of ten kilograms weight. In the more ancient literature these calcareous deposits were considered as ossifications.

There is much doubt if real bone structure ever occurs.

A remark of Freund is the more proper in this connection,

who describes such a tumor in the following manner: "Cut through with a saw, this large tumor showed a deep yellow color; a flat, smooth, even surface, which upon being placed upon the grind-stone, took on a high polish. Being macerated in muriatic acid, the capsule was readily separated from the inner structure by a sharp line of calcareous incrustation. The interstitial substance showed well-marked bone corpuscles, and the osseous texture was finely brought out."

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THE DIAGNOSIS AND TREATMENT OF OBSTETRIC CASES BY EXTERNAL (ABDOMINAL) EXAMINATION AND MANIPULATION.

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(Continued from July Number.)

D.—AUSCULTATION.

NEXT to palpation, auscultation gives us the most important and reliable information on the existence of pregnancy and the position of the fetus, for it enables us to hear: 1st, the pulsations of the fetal heart; 2d, the murmur in the umbilical

cord, the umbilical or funic murmur; and 3d, the uterine or placental murmur, besides the regular pulsations of the abdominal aorta, and the gurgling noises caused by the fluids and air in the intestines. Of these three chief sounds, the first and third are audible in nearly every regular pregnancy, the second only rarely, and then under pathological conditions. Occasionally a splashing noise may be heard, due to the succussion of the liquor amnii by the rapid and vigorous movements of the fetus. Several other sounds are audible during pregnancy and labor, such as the indistinct shock imparted to the abdominal walls by the fetal motions during the months immediately following quickening, the fetal shock; the muscular subsurrus of the exhausted uterus during a tedious labor, which often closely simulates the fetal heart; a rustling sound supposed to be produced by gaseous decomposition of the liquor amnii when the fetus is dead; and a series of rapid scratching sounds, attributed by Caillaut to the separation and crushing of the placenta by the uterine contractions. By far the most important are the

Pulsations of the Fetal Heart,

which, when distinctly and clearly heard, besides determining the existence of pregnancy, leave no doubt of the presence of a living and generally healthy fetus.

Although various observers, such as Depaul, Cazeaux, Hennig,¹ and recently Underhill,² claim to have heard the fetal heart before the eighteenth week of intranterine life, the two last-named unquestionably even as early as the fourteenth week, such cases are exceedingly rare, for all authorities agree that they are first audible in the period from the eighteenth to the twentieth week (Seanzoni even says rarely before the twenty-fourth week), before which time the diminutive size of the fetal heart, the comparative preponderance of amniotic fluid, and consequent only exceptional approximation of the child to the uterine walls, would naturally prevent their penetrating through the surrounding media. The case related by Depaul,³ and quoted by most text-books, of a woman in whom he heard

¹ Wiener Med. Halle, 1861.

² Obst. Jour. Great Britain and Ireland, Nov., 1875.

³ Traité d'Auscult. Obstétr., Paris, 1847.

the fetal pulsations (148 to the minute) eleven weeks after possible impregnation, is not quite beyond question, because his own figures show that at least three months had elapsed from the date of the first coitus.

In another case, Depaul detected the pulsations in the fifteenth week, and Dr. Ritchie¹ mentions one where he heard them certainly before the sixteenth week, at some period between the twelfth and sixteenth week. Of seventy-three cases, which Depaul examined for the purpose, before the twentieth week, eleven were in the third month, and in none were they audible; twenty-two were in the fourth month, in two of which only, both at three months and a half, could they be heard; and in the remainder, who were more than four months pregnant, the fetal heart could be heard in the majority of the cases.

Nægele² gives the eighteenth week as the earliest period at which he heard the fetal pulsations, and Evory Kennedy says that as a rule they must not be expected before the time of quickening, although in rare cases they may be detected before the end of the fourth month. Leishman and Playfair both mention the eighteenth to the twentieth week as the average period at which they can be heard.

I myself have lately heard the fetal heart distinctly (152 per minute) in a lady pregnant with her third child, in whom the last menstruation ceased exactly seventeen weeks to the day before I made my examination. She had plainly felt quickening nineteen days before, that is, during the fourteenth week.

As Underhill says (l. c.), the question of the earliest period at which these sounds can be heard is of great importance for two reasons: 1st. To aid in fixing or confirming the diagnosis of early pregnancy; 2d. From a physiologically interesting standpoint, to show at how early a period of development the fetal heart is capable of producing sounds audible through the abdominal walls of the mother. According to Schroeder, during the fourth lunar month, the fetus is from 10 to 17 cm. (4 to 6½'') in length, and weighs as much as 1,860 grains, or about 3¾ ounces. The somewhat remarkable fact, that so small an organ as the heart of a fetus of that size is capable

¹ *Obstet. Jour. Gr. Br.*, Nov., 1875.

² *Treat. on Obstetr. Auscult.*

of such energetic contraction as to be audible through several media, may be explained by the anatomical truth that the fetal heart during the early months is relatively much larger in proportion to the remainder of the body than later in intrauterine life, or in the adult. According to Meckel, at the second month the proportion is as 1 to 50; at birth, as 1 to 120; and in adult life, as 1 to 160.

As in auscultating for other sounds, so also are the fetal heart-sounds audible either by direct aural or by mediate stethoscopical auscultation. Doubtless there are many objections to direct auscultation, such as uncleanness or contagious disease of the woman, scabies, for instance; the impracticability of applying the ear to the abdomen during the earlier months, when the uterus has risen but a few inches above the symphysis pubis; the necessity of depressing the head so much as to interfere with regular cerebral circulation, and thus impede hearing, or of pressing the ear in so deeply if the woman is very fat, or there is an excess of liquor amnii, or the womb is separated from the abdominal parietes by intestinal convolutions, whereby also the acuteness of hearing is weakened; the distaste naturally felt by a lady to the proximity of the examination; and various *bruits* from the observer's hair, whiskers, clothing, interfering with the clearness of hearing. All of these objections are certainly avoided by the use of the stethoscope, indeed frequently one or other of them will imperatively demand the employment of that instrument. But, for my part, I have always practised and prefer direct auscultation, the ear being separated from the abdomen only by the chemise or a thin handkerchief, because I have found it easier to find and localize the pulsations to one particular region by this method; once found, the stethoscope no doubt aids in rendering them more distinct for counting. The majority of obstetricians prefer mediate auscultation (Playfair does not even mention the direct method). Influenced by the above objections, and under the same circumstances, I certainly agree with them. Playfair says that, after failing with the ordinary instrument, he has occasionally succeeded with the bin-aural stethoscope, so generally used in this country, which intensifies the sound in a remarkable manner. An objection to the

stethoscope, which might lose its triviality in some cases, is that the abdomen requires to be laid bare.

If we apply our ear directly or mediately to the abdomen of a pregnant woman after the fifth month, we can under ordinary circumstances easily hear the rapid dicrotic (double) beat of the fetal heart, which is entirely similar in rhythm to that of an adult heart, only twice as fast and much fainter, and can, therefore, with proper care never be mistaken for the pulsations of the abdominal aorta of the mother, which are synchronous with her radial pulse, however quick that may be. This peculiar, rapid double beat of the fetal heart, when once distinctly heard, is always recognized; it has very properly been compared with the ticking of a watch heard through a pillow, and its pulsations are ordinarily easily counted. They number from 120 to 160 per minute (according to Slater from 120 to 140, averaging 132), and their rapidity remains the same, as a rule, with slight variations, during the whole pregnancy; they gradually gain in strength, however, with the increasing growth and vigor of the child, and consequently become plainer the nearer the gestation approaches to term. Disturbing causes, such as pressure with the hands or stethoscope, manipulations, mental or physical excitement of the mother, may accelerate them or render them irregular, and uterine contractions during labor, or fetal or placental disease may diminish their frequency or change their rhythm.

Inasmuch as this peculiar sound is neither produceable by nor attributable to any other organ than the fetal heart, its presence is the only absolutely certain sign of existing pregnancy. Stress must be laid on the fact that its not being audible at a given moment by no means in itself disproves the existence of pregnancy or the presence of a living child, for there are certain conditions, such as excessive quantity of amniotic fluid, thickness of the abdominal walls, attachment of the placenta to, or the presence of fibroid tumors in the anterior wall of the uterus, an exceedingly loud uterine murmur, great mobility, and particularly an unfavorable position of the fetus, in which its back is removed from the anterior wall of the uterus, and the presence of uterine contractions, which, through their compression of the placental circulation after rupture of the membranes temporarily suspend the fetal cardiac pulsations (a circumstance to which attention has been

called by Hüter, in Marburg, and Schwartz, in Göttingen), and which I have very frequently observed myself—all of which conditions may for a time prevent the pulsations from being heard by the auscultating ear.

Generally we hear them with sufficient distinctness to enable us to count them, but frequently, owing to the above-mentioned reasons or to natural weakness of the child, they are very indistinctly audible, as if coming from a distance, and occasionally I have remarked nothing but an indefinite murmur or thrill imparted to my ear, giving me, however, a sign which, by dint of long practice, and aided by the peculiar sense of elasticity perceptible to the ear when applied directly to the abdomen in a normal, healthy pregnancy, I considered perfectly conclusive of the life of the fetus. I have too often experienced this almost indefinable sensation to regard it as mere imagination; it can be explained in no better manner, perhaps, than by saying that intuitively, as it were, the practised touch acquires a vague, indescribable impression of the presence of a living body within the abdominal cavity. It must be this peculiar sign which Pajot¹ calls by the name of "*choc fœtal*," and declares exceedingly valuable, particularly during the fourth and fifth months. He describes it as I do—a sensation of shock and abrupt *bruit*—very delicate, very faint, and still certain, and always recognized by a practised ear. Of course, I should hardly rely on this evidence alone in determining the life or death of the fetus in a doubtful case.

Occasionally we can only hear the beating after some search, and then only in one small spot, beyond a certain radius of which it becomes weaker or entirely inaudible, and frequently it changes places in accordance with the altered position of the fetus; we should, therefore, never be satisfied with one auscultation, and thereon base our diagnosis, for I have frequently seen cases where the pulsations were first extremely distinct at one spot and then disappeared entirely, the fetus having probably altered its position and removed its thorax or back from the anterior uterine wall, and on examination some time after, were again found at or near the old place. Out of 906 cases examined by Depaul during the last three months of pregnancy, only in 8 was he unable to detect the

¹ *Traité d'Auscultation Obstétricale*, Paris, 1847.

fetal heart; and only in 12 out of 180 cases did Dr. Anderson, of Glasgow, meet with the same result, and in each of these 12 the child was still-born (Playfair, l. c.). To pronounce the child dead, on the strength of the absence of the fetal cardiac pulsations at one examination, would thus manifestly be a rash proceeding. It is only when several auscultations at different periods, and made, if possible, by several competent persons, give the same negative result, that we should feel justified in pronouncing the child to be dead, especially if other pathognomonic symptoms, such as peculiar sensations of the mother, a feeling of weight and want of life in, and flabbiness of the abdomen, etc., come to our aid. Should the pulsations be audible at different spots of the abdomen, the place where they are loudest would indicate the closest proximity of the child, generally its back or side, sometimes its thorax, and thus serve to determine the position. As a rule, the thinner the uterine and abdominal walls, the more developed the fetus, and the nearer its thorax or back to the anterior wall of the uterus, the more clearly and distinctly audible are the pulsations of the fetal heart, and the left occipito-vertex presentation being the most common, it is chiefly at the lower part of the left side of the abdomen that we can hear them most loudly.

Owing to the peculiar position of the fetus in utero, it is evident that that portion of its body where the sound of the fetal heart is produced cannot be contiguous to the anterior wall of the uterus (with only one exception, *i. e.*, during the mechanism of a face presentation); it is, therefore, generally the dorsal surface of the thorax which approaches the anterior part of the uterus, and from which the fetal pulsations are transmitted. Should the back perchance be turned away from the maternal abdomen, and point either to her back or sides, the pulsations will usually be inaudible or very indistinct.

We thus find the sounds in vertex presentations best audible at either side of the abdomen *below* the umbilicus, generally on the side opposite to that where the feet of the child are palpable. Occasionally, especially in obliquity of the uterus, the whole body of the fetus inclines to one side of the median line, and we then find back, feet, and pulsations all on one,

usually the right, side; the direction of the back will, however, indicate the position to us, and prevent an error. Seanzoni holds the opinion that it is safer to determine the position from the pulsations of the fetal heart than from the often indistinct palpation of the members of the child, especially in doubtful cases, where these two signs seem to be in opposition to each other; should the feet of the child apparently be on the right side and the fetal heart be also best audible there, he would still consider the back of the child to be directed toward the right side of the mother, and attribute the apparent irregularity to a peculiar torsion of the body of the fetus, its back being turned anteriorly, but still in the right half of the uterus.

It is only in *face presentations*, where in the later stage of labor the peculiar posture of the child (chin anteriorly and removed from thorax, occiput on nucha) approaches the anterior wall of the thorax to the anterior wall of the uterus, that the pulsations are heard on the same side with the feet, close to the median line; at an earlier period, however, while the forehead and vertex with the back are still turned more towards the lateral and anterior portion of the uterus, that is, before the face has entered the superior strait and the rotation of the chin forwards has commenced, the pulsations are audible, as in vertex presentations, on the side to which the dorsum is directed.

In *breech presentations*, the thorax of the child is situated higher in the uterus than when the head points downwards, and consequently the fetal heart is heard on either side also, but usually on a level with or *above* the umbilicus. In *transverse positions*, we hear it below the umbilicus near the median line, but generally a little towards the side where the head is situated.

Owing to the frequent variations and the uncertainty of always hearing the fetal heart in similar positions in exactly the same particular place, it is evident that the distinction of vertex from face, and breech from footling presentations cannot be made alone from this sign, which, in such cases, can only be considered as a confirmation and valuable adjuvant.

The different subpresentations of each of the above can, however, generally be easily distinguished by auscultation alone,

in those designated as *first*, the fetal heart being almost invariably audible on the left, and in *second*, on the right side of the median line. In face presentations, as before mentioned, the conditions are reversed: *first* subpres. (forehead left, chin right), fetal heart on the right; *second* (forehead left, chin right), on the left side.

Since the discovery of the audibility of the fetal cardiac pulsations, the most remarkable theory regarding them is that first proclaimed by Frankenhäuser, of Jena, in 1859,¹ to the effect that the sex of the fetus in utero can be determined as soon as the fetal heart is distinctly countable, by the relative frequency of the pulsations, those of the male children being less rapid than those of the females. Finding that the cardiac pulsations of one hundred children, whose mothers he had examined during pregnancy and labor with the object of comparing the frequency of the fetal pulsations at these two periods, differed materially, and that the less frequent pulsations always occurred in women who were subsequently delivered of boys, and the more rapid in women who gave birth to girls, he proceeded carefully to count the fetal pulsations in fifty gravidæ and regularly noted down the probable sex of the fetus as indicated by the pulsations. In all of the fifty cases he predicted the sex correctly, twenty-two of the children being boys and twenty-eight girls; the average rapidity for the boys was 124, for the girls 144 pulsations per minute. This difference continued for some time after birth.

A statement so astonishing and interesting, both to the profession and the lay public, could not fail to excite widespread comment and frequent investigation. The first to report his disappointment was Prof. Breslau, of Zurich, who, in March, 1860,² published the results of his examination of fifty pregnant women, in twenty-five of which he made a wrong, and in nineteen a correct diagnosis (six cases being omitted as uncertain). He consequently expresses his belief that Frankenhäuser's luck in not missing once in his fifty cases was like the luck of a player at "*rouge et noir*," and that the celebrated discovery "is based on error and self-deception." As regards the continuance of the difference in pulsation after birth, asserted by Frankenhäuser, Breslau gives a table of thirty

¹ Monatsschr. f. Geb., XIV., 3.

² Mon. f. Geb., 1860.

children examined by him within twenty-four hours of their birth, according to which it appears that the average of cardiac pulsations of boys was 119, of girls 113, thus showing a diminution in rapidity for both sexes, but particularly for the girls.

Hennig, of Leipzig, in the same number of the *Monatschrift für Geburtshülfe*, reports twelve cases, five boys with an average cardiac double pulse of 143, and seven girls with 155 per minute. The fact that several of the observations made on girls were made very early in pregnancy, as soon indeed as the fetal heart became audible, in a measure invalidates their testimony, for, as he himself says, the frequency of the cardiac pulsations of the fetus are in an inverse ratio to the number of months of gestation.

Haake, of Leipzig (*ibid.*), also reports fifty cases, and finds that the frequent variations in the rapidity of the fetal pulsations during pregnancy, influenced, no doubt, by the movements of the fetus and probably other, to us unknown, exciting causes (a fact already pointed out by Hohl, in 1833¹), render the possibility of determining the sex of the fetus therefrom exceedingly doubtful. Although employing all the precautions recommended by Frankenhäuser, Haake was unable to diagnose the sex of the fetus correctly in a single instance. He also differs from Hennig in not having been able to find a proportionate decrease in the rapidity of the fetal heart with the advance of pregnancy.

Steinbach,² on the other hand, corroborates the statements of Frankenhäuser, making the average 131 for males and 138 for females, and predicting the sex correctly, and Zepuder³ in forty-five out of fifty-seven cases, after examining sixty cases, arrives at the same conclusion (average for females 138-144, for males 120-132). Notwithstanding this corroborative evidence, Scanzoni, in 1867,⁴ declares that his observations have led him to doubt the correctness of Frankenhäuser's statements, but advises further investigation of the matter, an advice which has been followed by Cumming, Wilson, Steele, Engelhorn, Hutton, Parvin, Devilliers, Peters, Mattei, Naylor, Budin, and doubtless numerous others, whose results have never been made public.

¹ Hohl, die geburtshülfl. Exploration, Bd. I., 1833.

² Mon. f. Geb., Dec., 1861.

³ Wiener Med. Halle, 14, 1862.

⁴ Lehrb. d. Geb., I., p. 162.

One of the most original and searching articles on this subject has been written by James Cumming,¹ of Edinburgh, who examined first forty-one and later one hundred and twelve pregnant women, with the view of ascertaining: 1st, the relation between the sex of the fetus and the rapidity of its cardiac pulsations; 2d, the relations between the weight of the fetus and its cardiac pulsations; and 3d, the relation of the maternal to the fetal pulse. He arrived at the following conclusions:

1. That the indications resulting from auscultation of the fetal heart are of a certain value in aiding us to diagnose the sex of the fetus in utero, but cannot solely be relied upon. Of sixty-one cases specially selected for this examination, forty, or nearly two-thirds were correct, and twenty-one incorrect.

2. That there seems to be a relation (or ratio) between the weight and the pulsations of the fetus in utero. Some of the children had a rapid pulse and were predicted to be females, but at birth they were found to be males, of below the average weight (7.28 lb. for males); others had a pulse below the average (138) and were pronounced males, but at birth proved to be females of large size, exceeding the average 6.8 lb. for new-born female children. But of seventy-seven cases thus examined, in forty-seven this ratio was apparent; it would, therefore, seem that when the fetal pulse is below the average, the fetus is above average weight (of its sex), and *vice-versa*, when the pulsations are above the average, the fetus is below the average weight (of its sex).

3. That for the weight per pound, the pulsations are slower in the male than in the female.

4. That there is no relation between the fetal and maternal pulse.

Devilliers found the average in the sexes to be the same as Steinbach, but preceded Cumming in attributing the difference to the size and weight rather than the sex of the child, believing large and well-developed children to have slower pulsations, whereby the relatively less frequent pulsations of male children are accounted for.

Dr. J. T. Hutton, of Brooklyn, succeeded in correctly pre-

¹ Edinb. Med. Jour., June, 1870, and Oct. and Nov., 1875.

dicting the sex in seven cases, and put the average number of pulsations, like Frankenhäuser, at 144 for the females, and 124 for the males, allowing a variation of six beats upwards from 124, or downwards from 144, without endangering the diagnosis, if the auscultation took place in the ninth month.

Induced by Cumming's first publication in 1870, Dr. Frank C. Wilson, of Louisville, Ky., turned his attention to this subject and reported his experience in two interesting and able papers, printed in the *American Practitioner* for Dec., 1873, and Dec., 1875, the first containing an analysis of 126, the second of 106 cases, in which the sex of the fetus in utero was predicted. Of the first 126 cases, in 109 only were positively accurate notes kept, and only in 9 of these did the prediction of the sex prove incorrect; of the second series of 106 it is not stated in what proportion the diagnosis of the sex failed. Taking all these 215 cases, the average pulse was found to be for the males 125, for the females 143, for both sexes together 134, this figure being the dividing line between the sexes, a range 4 beats above or below which would constitute a doubtful zone, where it would be impossible to predict the sex with any degree of certainty. The ratio of pulsations for the two sexes in his 215 cases is given by Dr. Wilson as follows:

From 110 to 125.....62 males and 2 females.

“ 125 to 130.....29 “ “ 7 “

“ 130 to 134.....14 “ “ 4 “

“ 134 to 138.....2 “ “ 12 “

“ 138 to 143.....2 “ “ 23 “

“ 143 to 170.....2 “ “ 50 “

The following very useful table for the determination of the fetal sex has been formulated by Dr. Wilson from the above figures:

From 110 to 125 almost certainly male.

“ 125 to 130 probably male.

“ 130 to 134 doubtful, with chances in favor of male.

“ 134 to 138 doubtful, with chances in favor of female.

“ 138 to 143 probably female.

“ 143 to 170 almost certainly female.

The results arrived at by Dr. Wilson will be seen to be unusually favorable to Frankenhäuser's theory, and no other author has so conveniently arranged his figures for practical

use. But they by no means settle the question, for a later publication by Engelhorn, of Leipzig,¹ finds, after a careful examination of thirty-seven cases, that no constant relation exists between the sex and the rapidity of the cardiac pulsations of the fetus. The average frequency for boys was indeed somewhat less, 137.7 to 140.8 for girls, but this difference is too slight, and too easily affected by external influences or the various times of examination, to be of any practical value, especially as some very low rates (128) occurred in girls, and very high ones (150 to 160) in boys.

As regards the relation between the maternal and the fetal pulse, Engelhorn found that to a maternal pulse of 60 to 80 beats, corresponds on an average a fetal pulse of 134.9 beats, and to the maternal pulse of 80 to 100 corresponds on an average a fetal pulse of 143.9, and he believes that this proportion is based on a more secure foundation than the dependence of the rapidity of the fetal pulse on its sex. As an explanation of this evident relation between the pulse-rates of mother and child, he says that, in the absence of direct vascular and nervous connection between the two, it may be supposed to depend on differences in the amount of carbonic acid in the blood, regulating the vaso-motor nervous centres of the fetus. Other observers, such as Fiedler,² Hohl, and Steinbach, have noticed a rise and fall in the fetal pulse, corresponding with similar variations in the temperature and pulse of the mother during typhoid fever and variola, but Engelhorn suggests whether it was not the high maternal temperature, more than the pulse, which affected fetal nutrition and cardiac contractions.

In accordance with the table by Volkmann, which shows that an average decrease of the pulse by 4.4 beats per minute, takes place in proportion to an increase in length of 10 centimetres of the whole body, Engelhorn found that to a body-length of 40 to 45 centimetres corresponded 147.9 fetal pulsations per minute; to 45 to 50 centimetres, 137.9 pulsations; over 50 centimetres, 126.6 pulsations. Whether this latter result is practically available to assist in determining the age of the fetus in utero is, however, pronounced doubtful.

Dr. D. A. K. Steele,³ from a careful record of fifty cases of

¹ Arch. f. Gyn., IX., 3, 1876.

² Mon. f. Geb., XIX.

³ Chicago Med. Jour., Sept., 1874.

pregnancy, arrives at the following conclusions: 1st, in the majority of cases male fetal hearts are slower than female; 2d, the average dividing line is 132 fetal pulsations per minute; below this $68\frac{1}{4}$ per cent are male, 20 per cent female, $11\frac{3}{4}$ per cent doubtful; above this $53\frac{1}{3}$ per cent are female, $26\frac{2}{3}$ per cent male, 20 per cent doubtful; 3d, the most accurate observations are made during the last four weeks of gestation; 4th, the rapidity of the heart's action is increased in proportion to the feebleness of the fetus; 5th, calcareous or fatty degeneration of the placenta renders the pulsations feeble and irregular; 6th, in some cases it would be possible to diagnose diseased conditions of the placenta from careful observation of the fetal heart; 7th, the weight of the child does not increase the force of the fetal heart.

In the same number of the same journal, Dr. Albert H. Strong, of Chicago, likewise reports his experience in fifty cases of pregnancy, in twenty-six cases of which a correct, in twenty-four an incorrect diagnosis was made. He found the average pulse of the males to be 136.3, of the females 137, which figures in themselves show the worthlessness of this test for determining sex in utero.

A like result is arrived at by Edward D. Peters¹ in thirty cases observed in the Boston Lying-in Asylum. He found the average pulse of males to be $136\frac{1}{4}$, of girls $146\frac{1}{2}$, a difference in itself sufficient to be of value, were not the fetal pulse subject to so many variations from external influences (exercise of mother, active motions of child, unappreciable causes) as scarcely ever to present precisely the same rate at any two examinations. Peters' observations show that, contrary to the law of extrauterine life, the largest children, male and female, had a considerably higher pulse-rate than the smaller ones (150 and 143 for largest girls and boys respectively; 143 and 131 for smallest girls and boys respectively).

Recently² Dr. Mattéi examined several hundred pregnant women and drew the conclusion that a fetal pulse below 135 indicates a male, above 150 female; only in three cases did his prediction turn out to be wrong, and these three were small and feeble females, whose pulse-rate was so slow as to be taken

¹ Bost. Med. and Surg. Jour., Aug. 23d, 1877.

² Arch. de Tocologie, March, 1876.

for males. This conclusion certainly does not agree with the majority of those drawn from the careful and conscientious observations of the numerous writers above quoted, and I cannot help thinking, must be accepted with some hesitation as an example of unusually lucky guesswork.

The fallacy of estimating the sex of the fetus by the rapidity of its cardiac pulsations has recently been shown most conclusively by Mr. Chas. G. R. Naylor, of Edinburgh,¹ in a paper on "The Influence of Digestion in the Mother upon the Frequency of the Fetal Pulse." He examined five women in the Maternity Hospital of Edinburgh, at repeated intervals, half an hour before and two hours after each meal (dinner, tea, and supper), being careful to keep the woman absolutely quiet in bed, in the recumbent position for at least half an hour prior to each auscultation. He found the fetal pulse-rate invariably increased after meals, the increase ranging from 4 to 32 beats, a rise of 14 to 20 beats being the most frequent. The degree of increase did not seem to be affected by the article of diet, the highest rise of 32 beats following a tea of bread, butter and tea, and one of the lowest, 8 beats, a dinner of Irish stew and bread.

Dr. Willis E. Ford reports² the results obtained in sixty-two cases. The average pulse rate of twenty-four female children was 143, the highest 160, the lowest 120; of thirty-eight male children, the average was 142.5, the highest 170, the lowest 110.

The latest and also most positively adverse conclusion on this subject has been arrived at by Paul Budin and Chaignot,³ who, at the instigation of Prof. Depaul, examined seventy cases with reference to the relation between the cardiac pulsations and the weight and sex of the fetus. They decide that there is no absolutely practical relation between sex and pulsations, for the latter may and do vary from fifteen to thirty beats at different auscultations, and even during the same examination, and both high and low pulsations are found indiscriminately in children of either sex. As regards the relation of weight, pulsations, and sex, they found quite as much average variation, although in a certain number of cases they

¹ Edinb. Med. Jour., May, 1876.

² On the Diagnosis of the Sex of the Fetus in Utero, N. Y. Med. Rec., Dec., 1878.

³ Gazette médicale de Paris, April 12th, 1879.

detected a higher rate in the larger children than in the smaller (smallest boy, 2,175 grammes, 132 beats; smallest girl, 2,008 grms., 144; largest boy, 4,210 grms., 144; largest girl, 3,650 grms., 144-150), thus differing from Cumming's results in his second series above referred to. But they distinctly state, that *there is no relation whatever between the weight, cardiac pulsations, and sex of the fetus.*¹

All this mass of conflicting testimony, as is but too often the case in our scientific controversies, does not seem to have positively settled the question: Can the sex of the fetus in utero be positively and uniformly determined by the relative rapidity of its cardiac pulsations? In all probability, like the allied mystery of the influences directing the original sex of the child, it will ever remain a doubtful point, frequently open to correct, but usually chance, interpretation, and a fertile source for investigation and conjecture.

¹ Since this article went to press, two additional papers have appeared on this subject, one by Dr. P. V. Schenck, of St. Louis, in the *St. Louis Courier of Medicine* for August, 1879, and the other by Dr. Georges Dausats, of Bordeaux, in the *Archives de Tocologie* for July and August, 1879, which latter paper is still to be continued.

Dr. Schenck examined 160 cases, and found the following figures: Total average, 138.5; total male average, 132.6; total female average, 145.7; lowest male, 120; highest male, 160; lowest female, 125; highest female, 172. The most he can say is, that "in a large majority of cases the male heart beats slower than the female." Dausats' article, even in its present unfinished condition, is a very complete treatise on the subject, and is entitled, "Researches on the Frequency of the Fetal Heart-Sounds." It discusses the differences in frequency during pregnancy and labor as influenced by age, sex, weight, size, motion, sickness, multiple pregnancy, uterine contractions, dystocia, etc., and gives in a full historical review almost precisely the same authorities as quoted by me. Basing on very careful observations of 107 cases, to which he adds 428 collated from recent authors, being a total of 535 cases, he concludes that, 1st. There is a certain connection between sex and habitual frequency of the fetal pulse which, however, becomes appreciable only when the number of pulsations exceeds 145, or falls below 135. 2d. Above 145 it is generally a girl, below 135 a boy. 3d. Omitting the cases of a pulse-rate between 135 and 145, the prediction of the sex will prove correct on an average 7 times out of 10. When we consider that about as many girls are born as boys, it is evident that this proportion of correct prediction is only better by 2 out of 10, or one-fifth, than one might expect to obtain by a pure guess.

The number of the *St. Louis Courier of Medicine* above mentioned contains, by the way, a letter from Paris, by Dr. F. Hartman, describing "Abdominal Palpation as a Mode of Diagnosing Fetal Positions and Conditions," a practice which the writer of the letter witnessed at the bedside and heard described in the college there, evidently as a result of the appearance of Pinard's book.

All authors hitherto have agreed in employing the necessary precautions during their examinations to avoid errors and attain as nearly as possible a uniform result. They have been careful to keep the women quiet in a recumbent position and free from mental or physical excitement, for some time before proceeding to auscultation; they have examined at different times, and compared the figures of each exploration, using only the average for their calculations; they have carefully excluded all doubtful cases in which the pulsations were not distinctly countable or in which some special cause for fallacy existed—they have done all this, and more still, to obtain a fair and truthful statement, and what has been the fruit of all their labors? Steinbach, Zepuder, Hennig, Hutton, Mattei, Cumming, and Wilson have (the last two only to a certain qualified extent) corroborated Frankenhäuser's observations, while the undoubtedly equally weighty evidence of Breslau, Haake, Scanzoni, Naylor, Engelhorn, and Budin, based on equally careful researches, utterly denies the existence of any law for the prediction of the sex of the fetus in utero, as its originator would have us accept. The latest and one of the ablest advocates of the law, Dr. Wilson, in his last paper (Dec., 1875) does not feel justified in saying more than that, "although the sex may not be determined with absolute certainty, yet we can certainly make a very shrewd guess;" and the last author but one on the subject, Engelhorn (June, 1876), concludes his paper with the remark, that his own and the observations of others justify him in believing that the influences governing the frequency of the fetal cardiac pulsations will probably never be determined with sufficient accuracy to enable us to draw from them, before birth, any positive conclusions regarding the sex of the fetus.

I regret exceedingly that I did not avail myself of the abundant and convenient opportunity offered me abroad to institute a systematic inquiry into the question, but I was in a measure deterred from thinking of it by the evident disbelief with which Frankenhäuser's discovery was regarded by Scanzoni, who apparently thought the matter settled in the negative. Whatever individual cases I may since have examined with the view of satisfying either the mothers or myself as to the sex

of the expected child, some with a correct, others, apparently equally certain, with a mistaken diagnosis, have led me to concur with Engelhorn's and Budin's opinion. You may be successful or you may not, in either case it is a matter of chance, and if correct, you get the credit of having made, as Dr. Wilson says, "a shrewd guess." Therefore it is best always to qualify your diagnosis as to the sex by saying that the *prima facie* evidence (the frequency of the pulsations) would denote a male or female child, as the case may be, but that the result will show whether your supposition is correct. The disappointment of finding a girl, when a boy is ardently desired, and has been promised by the obliging medical attendant, or *vice versa*, may cause serious trouble to the patient and much annoyance to the doctor.

The *therapeutical indications* to be derived during labor from irregularities in the fetal cardiac pulsations are exceedingly simple. As has already been stated above, during the normal uterine contractions or labor-pains the placenta is compressed and its circulation more or less interfered with, as long as the pain lasts; naturally the fetal heart is affected thereby, and its pulsations become for the time faint or diminished in frequency, to regain their normal strength and rhythm as soon as the disturbing compression ceases. From this normal intermittent irregularity the fetus in no wise suffers; should the uterine contractions, however, become so severe, constant, or rapidly recurrent as to continue this depression of the fetal circulation for some length of time, the fetal heart-sounds do not regain their normal power and rapidity, but grow fainter and fainter and more and more irregular and infrequent, until they finally cease entirely. This is apt to be the case in the spasmodic condition known as tetanus uteri, and after the use of large doses of ergot during the second stage of labor. The indication to check the excessive contractility of the uterine muscular fibres by narcotics and antispasmodics, and if unsuccessful therewith, to effect the delivery of the child as rapidly as possible if its life would be saved, is urgently imperative. Further, any constant and increasing irregularity of the fetal pulsations, during a severe or tedious labor, where the head is subjected to severe and lasting pressure, will demand the

speedy extraction of the child, as does also a non-reducible prolapse of the umbilical cord when the child is still alive and its heart shows signs of failing. As the fetal heart is the evidence of the life and health of the fetus in utero, it is evident that it should be carefully watched by repeated examinations during every labor in order to detect and remedy any danger to the child as soon as it occurs.

The Umbilical Murmur.

Not to be compared in interest or importance to the fetal cardiac pulsations, but still possessed of considerable scientific and some practical value, is the funic or umbilical souffle, a single blowing systolic murmur heard synchronous with the fetal heart (generally most distinctly at the spot where the latter is audible), in certain pathological conditions of the cord or fetus. This fact of its being synchronous with the fetal heart sufficiently distinguishes it from the uterine murmur, which coincides in rhythm with the pulse of the mother, and also greatly exceeds the funic souffle in strength and intensity. The first author whom I find credited with having pointed out this sign is Evory Kennedy in 1833,¹ who attributed the murmur to compression of the cord by its being wound or twisted around portions of the child's body, as he was able to produce it at will by pressure on the cord before detaching the child after birth. This opinion was shared by Naegele, Spöndli,² Devilliers³ and others, while Kiwisch, Mossman, Martin, and Breit endeavored to explain the sign in other ways. Breit took the untenable ground that stenosis of the cord was the main cause. Kiwisch utterly denied its causation through duplicatures of the cord, without offering any adequate explanation; Mossman⁴ believed it to depend entirely on organic valvular disease of the fetal heart, basing his opinion on a case of his, where this pathological condition was found post mortem; Martin⁵ in twenty-three instances of funic murmur found only fourteen in which the cord was wound around the fetal body, and in twenty-eight cases of such duplicature there

¹ Treatise on Obstetric Auscultation, 1833.

² Mon. f. Geb., III., 1854.

³ Union Méd., II., 1854.

⁴ Mon. f. Geb., IV.

⁵ Ibid., VII., 1856.

was no murmur, wherefore he doubts the causative agency of the above anomaly. Gregor Schmitt,¹ of Würzburg, reported five cases in which the funic murmur was audible, in two of which the cord was found slightly wound around the neck of the fetus, in one it was prolapsed, in one no anomaly of the cord was detected, and in the fifth and most interesting case the autopsy, performed by Virchow, revealed marked hypertrophy of the right ventricle, insufficiency of the tricuspid and mitral valves, and numerous small, bright-red, gelatinous nodules on both these valves. This last case corroborates Mossmann's view, as also does a case reported by Andreae.² Frankenhäuser³ and Hecker⁴ both locate the murmur in the umbilical arteries, the latter chiefly at the point of exit from the fetal body; whereas Scanzoni⁵ expresses decided doubts as to the possibility of a souffle occurring in such small arteries as the umbilical, and believes that, although the cause of the murmur in all probability generally consists in compression of the cord, the murmur itself does not originate in the funic vessels, but in the fetal heart, being caused by the rapid influx of the reduced volume of blood into the disproportionately large cardiac cavities, and thence transmission of the murmur throughout the cord. As evidence he quotes the above-mentioned case of Schmitt.

Schroeder⁶ states that the precise conditions under which the funic murmur occurs are not known, but that it undoubtedly occurs in the cord, probably close to the umbilicus, perhaps caused by flexion of the cord at the junction of the cord and skin; that he, as well as Hecker, found it less frequently when the cord was wound around the fetus, and that he therefore thinks this accident can scarcely be considered a cause. As a proof of its origin near the umbilicus he mentions the fact that it is generally best heard where the fetal heart is most distinct, but disappears at more distant spots, leaving only the clear, if faint, fetal pulsations.

The most complete recent paper (but one) on the subject is

¹ Scanzoni's Beiträge, 3, 1858.

² Diss. inaug., Königsberg, 1870.

³ L. c.

⁴ Hecker u. Buhl, Klinik der Geb., I.

⁵ Lehrb. d. Geb., I., 1867.

⁶ Geburtshülfe, 1872.

by Winckel,¹ who met with twenty-seven cases among three-hundred confinements, from which he drew the following conclusions, which I think may be considered as expressing most clearly the present state of the question: The souffle occurred in nine per cent of his cases (Frankenhäuser says eight per cent, Schroeder and Hecker give as high as fourteen to fifteen per cent; as far as my experience goes, I should incline more to the proportion stated by Winckel, making it even less frequent). It occurred with equal frequency in primiparæ and multiparæ. It was most frequent in vertex presentations, occurring only twice in breech and once in an oblique presentation; thus refuting (as did also Hecker) Frankenhäuser's assertion that it is most frequently audible in breech presentations. The souffle was almost uniformly audible in the neighborhood of the fetal heart, the latter being clear and distinct at one spot, a few centimetres distant from which the souffle was loudest and the fetal heart less distinct. Winckel says that the souffle may be audible at a distance from the cardiac pulsations as well as close to them, thus in a L. O. A. presentation it may be heard on the right side of the fundus if the cord is compressed at that spot by the thigh; but its being audible near the fetal heart is easily explained by considering that the compressed portion of the cord, if compression occurs by its being twisted around the body or one of the limbs of the fetus, is naturally, at the best, but a short distance from the fetal thorax and heart. The audibility of the murmur between the symphysis and umbilicus by no means necessarily indicates that the cord is wound around the neck of the fetus, as Frankenhäuser believed, because the latter accident occurs very much more frequently than the murmur; and twisting of the cord in general is only occasionally accompanied by the souffle. (The four cases reported by Dr. Wilson,² in which he heard the funic souffle over the pubis, diagnosticated therefrom the twisting of the cord around the neck, and found his diagnosis confirmed at the delivery shortly after, are certainly too positive instances to permit of their being considered as mere chance coincidences. Perhaps we may put the facts thus:

¹ *Pathologie der Geburt.*, 1869.

² *L. c.*, 1873.

The non-audibility of the souffle over the pubis—or indeed anywhere—does not prove that the cord is not twisted around the neck or some other portion of the child; where it is audible, however, above the pubis, we may predict with tolerable certainty that the cord is coiled around the neck, or if audible elsewhere, around some other portion of the child.)

Winckel agrees with the majority of authors in locating the murmur in the cord itself, but believes that it occurs not only in the arteries of the cord, but even more frequently in the more compressible umbilical vein, basing his assumption on the fact that frequently a protracted funic murmur is not productive of evil to the child, which would scarcely be probable if arteries and vein were both obstructed. As regards the significance of the murmur, Winckel differs from Scanzoni, Hecker, Martin, and others (who deny that it has any practical importance), and agrees with Schmitt and Wilson, that a long-continued funic murmur cannot but be indicative of danger to the child, and may under appropriate circumstances call for active interference. During pregnancy, as Schroeder says, it possesses absolutely no practical value, for even if the exact condition causing the murmur could be ascertained (as, for instance, if the cord could be felt crossing the fetal back or limbs through the thin utero-abdominal walls, as Winckel and Spöndli claim repeatedly to have done), nothing could be done to remedy the malposition at the time. On such occasions the fetus must be left to change its position for a less precarious one by its own individual mobility.

To recapitulate: The funic souffle is caused by some obstruction to the flow of the blood through the umbilical vein or arteries, either both together or separately, if the latter, more likely the vein; or it may originate in the fetal heart itself, when its valves are diseased. The obstruction in the cord may be produced either by its compression between the body of the fetus and the organs of the mother (as in prolapsus of the funis), or by its being more or less tightly wound around the neck, body, or limbs of the fetus, or finally by its being tied in a true knot (a very rare occurrence). Owing to the frequent changes of position of the child, and the slipping of the loop of cord in consequence, the compression is often

removed and the murmur thus necessarily becomes intermittent, being audible at one examination and inaudible at another; if it is permanent and always in the same place, the inference would be that the cord is either tightly wound around the neck, perhaps more than once, or that it is tied in a true knot. The audibility of the murmur over the spot where the neck has been ascertained to be, although favoring that view, does not necessarily or invariably denote that the cord is wound around the neck (as Wilson asserts); neither is it a natural inference (also Wilson), if the murmur is heard not at the neck, but at some point in the course of the cord, that it is caused by a knot at that place. Case forty-seven reported by Dr. Wilson,¹ of a constant funic souffle being heard at the neck, which was thought to be due to the cord being around the neck, but which at delivery proved to "be caused by an excessively varicose condition of the funis" itself disproves the uniformity of the rule laid down by him.

The most recent contribution to this subject has been offered by Pinard,² of Paris, who made a series of exceedingly interesting experiments on a large number of umbilical cords, taken from women whom he had repeatedly examined during gestation and labor, from which he drew the following conclusions, of which the second will be seen to be novel and especially interesting. When a pregnant female is carefully examined by auscultation during the latter half of pregnancy, three varieties of fetal murmurs may be heard:

1. A murmur corresponding to the first sound of the fetal heart, which is muffled instead of being sharp and distinct. This is a cardiac murmur, is permanent, and disappears some hours or days after birth.

2. A murmur with its maximum at a greater or lesser distance from the fetal heart. This is a funicular souffle, which may be single or double, and is due to the presence of well-developed semi-lunar or diaphragmatic valves, either in the vein or the arteries, or in both varieties of vessels together.

3. A single transient murmur, isochronous with the pulsation of the fetal heart, but stronger than either of the above varieties. This funicular souffle is due to a passing compres-

¹ *Am. Pract.*, Dec., 1873.

² *Gaz. Méd. de Paris*, March 18th, 1876.

sion of the elements of the cord, either by the fetal parts themselves or by the stethoscope.

As will be inferred from what has already been said, the scope for operative interference on the part of the obstetrician in cases of funic murmur during actual labor is exceedingly limited, being confined to the removal of pressure from the cord by a suitable lateral or knee-elbow position, if the seat of compression can be ascertained by indagation, as in presentation of the cord before rupture of the membranes, or if the murmur continues after the prolapsed cord has been replaced, or by manual or instrumental reposition of the actually prolapsed cord; further, to the rapid loosening of the coils of cord around the child's neck, as soon as the head emerges from the vulva, if the seat and persistence of the murmur lead to the supposition that this is the case; finally, to the speedy delivery of the child by whatever means may seem feasible and advisable, if the constancy and increasing force of the murmur, especially if coupled with an irregularity or growing indistinctness of the fetal heart, indicates serious danger to the child. The necessity, therefore, of carefully watching both the murmur and the fetal heart during every case of funic souffle *inter partum* is obvious.

The Uterine Murmur.

As early as the fourth month of pregnancy, soon after the uterus rises out of the pelvic cavity, the auscultating ear in the majority of cases readily detects a single blowing or wheezing sound synchronous with the maternal pulse and generally audible in greater or lesser intensity all over the uterine ovoid. As pregnancy increases, it becomes louder, often overpowering the fetal heart-sounds, and is most plainly heard in either inguinal region, more rarely in the median line and near the fundus. The sound is usually so distinct that even superficial auscultation cannot fail to distinguish it, but its intensity and site frequently vary, and at times it may be very faint or entirely inaudible, or have disappeared from the spot where it was once plainly audible, to be heard only on the opposite side of the abdomen. This irregularity is attributed by Braxton Hicks, during gestation, to the normal intermittent uterine contractions

occurring during the second half of that period (already referred to under Palpation), and his opinion derives unquestionable support from the well-known influence which the uterine contractions during labor produce on the uterine murmur. At the inception of a pain, the murmur increases in intensity, but rapidly diminishes and entirely ceases at the acme, to reappear again when the contraction has passed away. Whether it is possible to distinguish the true from the so-called spurious labor-pains by the above test, as Dr. Wilson asserts,¹ seems to me doubtful, if we accept Dr. Hicks' explanation of the intermittence of the murmur during pregnancy. Nor is this test needed, for a vaginal examination will usually tell us whether the alarm is a true or false one. Neither am I quite sure of the correctness of Dr. Wilson's assertion, that the continuance of the murmur after the expulsion of the placenta indicates a "relaxation of the uterine walls incident to concealed hemorrhage" and serves as a warning to the obstetrician. At least, Scanzoni² says that he has heard it on the fourth and sixth days post partum, without making mention of its being a diagnostic sign of impending post-partum hemorrhage or of that accident having occurred in his two cases.

The causation of the puerperal souffle, as it is also called, has been the subject of even more discussion than that of the funic murmur. The various theories held by Kiwisch, Bouillaud, Depaul, Dubois, have already been briefly mentioned in the Historical Sketch. Scanzoni, in the fourth edition of his Treatise on Obstetrics, 1867, expresses the conviction (held also by Depaul) that the uterine murmur is caused, in the majority of cases, by the rushing of the blood in the tortuous branches of the uterine arteries, particularly in either inguinal region, where this tortuosity is most marked and where the murmur is ordinarily most pronounced; that it may also be produced by the passage of the blood from the arteries into the large veins of the uterus, a view coincided in by Dubois and later by Skoda³; and finally, that in a few cases, where a slight pressure on the external epigastric arteries is shown to modify or arrest the murmur, the latter vessels may certainly be con-

¹ L. c., 1873.

² L. c., Vol. I., p. 167.

³ Percussion and Auscultation, sixth edition.

sidered to be the seat of that murmur. This latter theory, originally held and ultimately relinquished by Kiwisch, and admitted by Scanzoni for certain rare cases, has recently been revived by François Glenard, of Paris.¹ By direct observation, he claimed to have found that, when the abdomen is distended, the stretching is not uniform, but is confined to the fibrous structure called the linea alba. This is spread out into a large lozenge-shaped area, bordered by the recti muscles. These muscles are separated, but not increased in breadth. The gravid uterus is thus slung, as it were, in a bandage between and by them. Examining, he finds that the maternal souffle is heard upon a curved line which corresponds to the course of the epigastric artery, which, in consequence of the mode of expansion already described, remains throughout at the same distance of ten centimetres from the spine of the ilium. Finding that the souffle is most distinct over the epigastric arteries, Glenard applied the crucial test of compressing the artery in the lower part of its course and succeeded in completely arresting the souffle. The proof seemed convincing, and Glenard confidently volunteered to demonstrate the truth of his assertions to the Académie de Médecine of Paris. In this, however, he signally failed, for he was utterly unable to affect the murmur by any compression he could exert on the epigastric arteries. Smarting under this failure, he fortunately succeeded in discovering another explanation of his former observations. Injecting the uterus of a woman who died three days after labor, he distended the arteries and found an artery as large as the brachial arising from the uterine artery and lying on the uterus almost exactly in the course of the epigastric. This artery he calls the puerperal artery, and believes it to be the location of the souffle.

Glenard's discovery still awaits confirmation, which can hardly be long in coming if it really is founded on fact. For my part, I believe that so large a vessel as the supposed "puerperal artery," if it really existed, would have been discovered years, nay, centuries ago, and that the explanation now generally accepted, that the uterine souffle has its seat in the large and tortuous uterine arteries, is sufficiently explicit. That

¹ Arch. de Tocologie, 1876.

a murmur may also originate in the venous sinuses of the uterus, and under certain circumstances in the large abdominal vessels, both veins and arteries, during the physiological chlorotic condition of the blood in pregnancy, seems by no means improbable. A relation of the murmur with the location of the placenta, applicable to the diagnosis of the seat of that organ (whence the old term "placental" souffle), is denied by all the advocates of this accepted theory, except Depaul. I myself have never been able to diagnose the seat of the placenta by the focus of the uterine souffle, except in so far as the audibility of the souffle also near the right horn of the uterus would lead me to suppose that the placenta was there inserted, a supposition which occasionally proved correct. But statistics by Gusserow, Martin, Bidder, and Schroeder show that the placental site is found almost with equal frequency on the anterior and on the posterior wall of the uterus, but that its lateral insertion is quite rare, only in about five per cent of the cases, the dextral insertion being twice as frequent as the sinistral. If the souffle depended upon and were loudest in the neighborhood of the placental site, it would, therefore, naturally in one-half the cases be most distinct near the median line, in the other half not at all or faintly audible, which, as we all know, is not the case, for it is most pronounced bilaterally where the uterine arteries are most tortuous. I can, therefore, agree neither with the old observations of Hohl, nor with those recently reported by Wilson, because they are at variance with my own and the experience of the majority of observers. Besides, as already stated by Seanzoni and Playfair, the murmur continues after the removal of the placenta. Practically, as a diagnostic sign of pregnancy, the souffle has lost in value since the observations of Velpeau, Depaul, Beau, Peaslee, Spencer Wells, and numerous others have shown that a murmur to all intents and purposes identical with it frequently occurs in large ovarian and fibroid tumors, the surface of which is covered with tortuous and dilated blood-vessels. In combination with the other well-known diagnostic signs it deserves consideration; alone it has but a supposititious value, and a too firm reliance on its puerperal character would be likely to lead to serious errors in the diagnosis of abdominal

tumors. As a sign of the life of the fetus it is equally valueless, for it continues after the death of the fetus, and even after the birth of the child.

Recently,¹ Rotter in Erlangen accidentally discovered that the uterine souffle is palpable, by detecting with the finger a distinct thrill in a circumference of 4-5 cm. around the umbilicus; this thrill was synchronous with the maternal pulse.

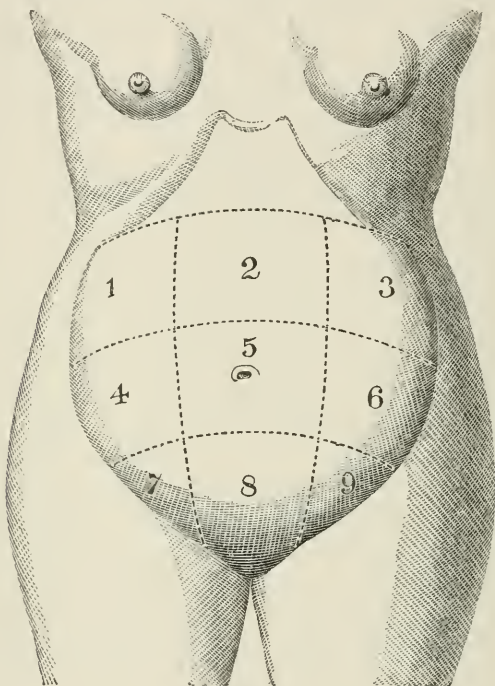


FIG. 5.

With the stethoscope a loud uterine souffle was heard at this spot. This observation was verified in eleven cases out of twenty in women near term. That the thrill proceeds from the uterine vessels, and not from the epigastric artery, is proved by the change of position of the thrill when the position of the uterus is altered, as when a woman assumes another posture; also by the fact that the vibrating tract of the uterine souffle crosses the course of the artery. A distinct thrill could

¹ Arch. f. Gynäkol., V., 1873.

be felt per vaginam corresponding to the external murmur in each lateral ascending branch of the uterine artery. The palpability of the uterine murmur had already been discovered by Rapin,¹ but was not corroborated.

CHART FOR EXTERNAL EXAMINATION OF OBSTETRIC CASES.

		PALPATION.							AUSCULTATION.		Percussion.
		BACK.	EXTREMITIES. LEGS.	ARMS.	BREECH.	HEAD.	FORE-HEAD.	CHIN.	FETAL HEART.	UTERINE MURMUR.	
PRESENTATION.	VERTICAL.	I.	Left. 3, 6, 9.	R. upper. 1.		L. upper. 3.	Either at or later, just within pelvic brim.			L. lower. 9 to 6.	Generally dull over whole uterus, ceasing at convex border of uterus above. Useful chiefly to determine extent of uterus in early months before palpation is practicable.
		II.	Right. 1, 4, 7.	L. upper. 3.		R. upper. 1.			R. lower. 7 to 4.		
		I.	Left. 3, 6, 9.	R. upper. 1.	Sometimes centre.	Left and middle upper. 2, 3.		Left. 9.	Right 7.	First middle, 5, 8; later, 1, 9, 6.	
		II.	Right. 1, 4, 7.	L. upper. 3.	5.	Right and middle upper. 1, 2.		Right 7.	Left. 9.	First middle, 5, 8; later, 1, 9, 4, 7.	
		I.	Left. 3, 6, 9.		Occasion'ly right centre	L. upper. 2, 3.				L. middle to upper, 6, 3.	
		II.	Right. 1, 4, 7.		4, 5.	R. upper. 1, 2.				R. middle to upper 4, 1.	
	TRANSVERSE.	I.	Lower and middle.	If palpable near centre.		R. lower. 7.	L. lower. 9.			L. lower. 8, 9.	
		II.	4, 5, 6, 7, 8, 9.	5 and 8.		L. lower. 9.	R. lower. 7.			R. lower, 7, 8.	
		I.	Not palpable.	More frequently palpable near centre.		R. lower. 7.	L. lower. 9.			Left lower, 8, 9.	
		II.		5 and 8.		L. lower. 9.	R. lower. 7.			Right lower, 7, 8.	
										Less distinct.	

[To be concluded in the next number.]

¹ Schweiz. Corr. Bl., 2, 1873.

A CASE OF PLACENTA PREVIA, TREATED AT COLINA, CHILI,
IN 1832, BY WHAT IS KNOWN AS THE SIMPSON, OR MORE
CORRECTLY, THE KINDER WOOD METHOD.¹

BY

DR. W. S. W. RUSCHENBERGER. U. S. N.,
President College of Physicians, Philadelphia.

Reported by ROBERT P. HARRIS, M.D.

BUT for the death of Dr. Kinder Wood, of Manchester, in 1830, he would no doubt have soon given to the medical profession his plan for arresting hemorrhage in placenta previa, by the separation of the placenta, as described some years later (1845) by Sir James Y. Simpson; for among his papers ready for publication was one describing the method, and giving his views of its physiological action. It had been known for two hundred years that the expulsion of the placenta, even when it preceded that of the fetus by some hours, generally resulted in a cessation of the hemorrhage; but it remained for Simpson to reason out, put into practice, and report to the profession a plan for saving the woman by the artificial and rapid removal of the placenta, as a means of sudden arrest of the bleeding, in large measure independent of the general contraction and consequent cessation which attends the evacuation of the uterus.

Dr. Robert Barnes has proposed an improvement upon the plan of Simpson, the success of which tends to somewhat diminish our faith in the theory of the latter, that the hemorrhage comes from the detached placental surface supplied from the maternal vessels through the attached portion; and hence the importance of separating the *whole* placenta to stop the bleeding. By the plan of Dr. Barnes, the placenta is separated around the os by the fingers to arrest the hemorrhage, and left peripherally attached to preserve the fetal circulation and the child's life.

Dr. Ruschenberger, in his case, simply acted upon the idea

¹ Read before the Obstetrical Society of Philadelphia, July 3d, 1879.

of Paul Portal, that the placenta was an obstacle to delivery, that it ought to be removed, and that by its removal and evacuation of the uterus, the organ would be free to contract and arrest the hemorrhage. It did not occur to him that the separation of the placenta alone was competent to do this.

The report I am about to make was received in answer to several urgent requests made to the operator, and is as follows:

“The case of placenta previa to which I have referred in conversations with you, and which I mentioned at the time in letters to two or three medical friends, now deceased, occurred in June, 1832, forty-seven years ago.

“I was a guest of a friend then residing in Colina, a scattering settlement, seven leagues to the northward of Santiago, the capital of Chili. My fellow-guest, Dr. John Purves, of Philadelphia, a graduate of the University of Pennsylvania in 1824, had been in practice some months in the neighborhood. He was engaged to attend in her first confinement the wife of Don V. I., who was at the time a senator in the Chilian Congress. The lady was about twenty years of age, possessed of a good constitution and vigorous health.

“I was urgently summoned in consultation, and reached Don V.’s house about 11 P.M. I found the doctor in great anxiety, pacing the parlor, and learnt from him that the patient had been in labor about four hours, that the pains recurred at short intervals, and there had been a continually increasing hemorrhage almost from the commencement, which had become very alarming, and that the progress of the case was slow. I was introduced to the chamber by putting aside a stuff-curtain which closed the doorway between it and the parlor.

“I found the lady with her feet near the foot of the bed, knees drawn up, reclining against her husband, a rather short, corpulent man, who sat in the middle of the bed, wearing his riding-cap, with a leg booted and spurred extended on each side of her, and his hands clasped in front of her chest to afford support. The expression of his countenance betokened anxiety. Indeed, the looks of every one present in the large, well-furnished room, dimly lighted by two candles, and warmed by a brazier of smouldering charcoal, indicated a vague apprehension of impending calamity. The scene made a strong impression on me. The sisters of the patient, the nurse, the doctor, and the husband observed me in silence, and seemed to look to me alone for help in their extremity.

“The patient was extremely pale, much exhausted from loss of blood, and her pulse was rapid and very feeble. Digital examination informed me that the os uteri was well dilated and wholly occupied by the placenta which was bleeding freely, and at every pang there was a gush of blood. I determined instinctively that the uterus should be emptied as quickly as possible. It seemed to me that the placenta was the only obstacle in the way of prompt delivery, as the uterine contractions were strong and frequent.

Without stopping to explain my views to Dr. Purves, or withdrawing my hand, I passed a finger over the edge of the os, and moving it entirely around the opening as rapidly as possible, broke up the attachments between the placenta and uterus. A forcible pain instantly followed, the placenta and head were protruded, and the child, enveloped in the membranes, was at once delivered. The patient was placed flat on her back, the uterus contracted rapidly, and the hemorrhage ceased.

"The child was released from the membranes without delay, and the cord tied and cut. It gasped several times, but efforts to maintain respiration beyond a few minutes were unavailing.

"I visited Santiago again in 1836, and learned that several months elapsed before the lady recovered her usual health. Subsequently I was informed that she had borne three children, and that there was nothing unusual in either of the three confinements. I understood, however, when in Chili again in 1856, that she finally perished from phthisis;" which, it is well known, is very prevalent in the seaports of Peru and Chili.

A case quite similar to this occurred in Paris in 1679, under the care of Paul Portal. The woman and child were saved, although the former was almost in articulo mortis before the delivery. Guillemeau of Rouen, and Viardel of Paris, relate cases dating back some years earlier than this.

Although the effect of the placental separation was so long known and recognized, it does not appear to have been put to any practical use until Dr. Kinder Wood tried it and taught its value in his obstetrical lectures in Manchester. The thought appears to have also occurred to Mr. Chapman, of Bedfordshire, England, in 1800, but he never seems to have acted upon it. Dr. Thomas Radford, the successor to Dr. Kinder Wood in his obstetrical chair, claims to have preceded Simpson in the use of the method of placental delivery, but restricted the application to cases of extreme exhaustion, and was under the impression that the fetal head, by pressure over the placental seat, arrested the hemorrhage mechanically.

Notwithstanding the prior claim of Kinder Wood, I am not inclined to detract from the merit of Simpson, who certainly made known the plan of operation to the medical profession. Others have operated in the same way, and with success; but their object was to secure uterine contraction by emptying the organ, rather than an immediate check of hemorrhage by destroying the utero-placental vascular connection. It is unfortunate that Dr. Wood did not publish his views during his

life, and thus secure to himself the credit which we are forced to give to a later and equally independent observer, whose monograph on the subject is of a very exhaustive character, and has been very widely circulated.

Since the introduction of Barnes' dilators, the whole system of treatment in placental presentation has been revolutionized and improved under Dr. Barnes' direction; and although still a very dangerous complication in labor, it is much less fatal in skilful hands than it was thirty years ago. The late Dr. N. D. Benedict, of this city, had, about thirty-four years ago, the remarkable experience of three cases of placenta previa in private practice in one week. In the first case he called in a learned obstetrical professor, under whose plan of treatment the woman died; in the second he summoned a second obstetrical professor with the same result; in the third case he managed by himself, and the woman lived. I regret that the cases were never published, and that I am consequently unable to give the methods of treatment adopted. Neither of the professors had in a long experience met with as many as three cases in their own practice up to that time.

The case of Dr. Ruschenberger appears to have been one of central placental presentation, a very rare form of location, as the attachment is generally quite eccentric as regards the os uteri, and sometimes only the edge of the placenta is over the opening, a condition which may materially alter the management of the delivery. In fact, the cases vary so much as to the period of hemorrhage, its amount, the progress of dilatation of the os, the attachment of the placenta, etc., that we must either treat them upon general principles, or prepare a set of rules to meet each of the known varieties. The indications are, to hasten the dilatation of the os, empty the uterus of much of its fluid, deliver the fetus, and secure as rapid a contraction of the whole organ as possible. For these, we have artificial dilatation and arrest of hemorrhage by Barnes' bags, the partial separation of the placenta and use of the hot-water douche, the puncturing of the membrane beyond the edge of the placenta, and the delivery of the fetus by version, the forceps, or natural efforts, as may be most suitable under the existing circumstances. Simpson's method may be valuable in some cases, but is dangerous to the life of

the fetus. The old tampon, so generally used up to 1845, is of very little value compared with the more recently devised methods, and ought to be abandoned in all bad cases.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, April 15th, 1879.

DR. A. J. C. SKENE, *President, in the Chair.*

PYO-SALPINX.

DR. SKENE presented a specimen of pyo-salpinx obtained from a patient who had an ovarian cyst, an enlarged uterus, and two polypi in the cavity of the cervix uteri.

At the time the patient was examined, the specimen occupied the sac of Douglas below the ovarian cyst, and was supposed to be a portion of the large cyst of the ovary. She was attacked with general peritonitis, which was the cause of death.

FECAL FISTULA COMMUNICATING WITH THE BLADDER.

DR. SKENE presented a second specimen, which was of interest as showing how much the human bladder would tolerate. One year ago the patient, a lady about 50 years old, was attacked with what he then diagnosticated as pelvic cellulitis. Her disease progressed, and, after a time, she was attacked with obstruction of the bowels that lasted for some time, and nearly cost her her life. About seven months ago, she began to discharge fecal matter from the bladder, and continued to do so, emptying the bowels somewhat irregularly, through that channel. Dr. Skene saw her a few months after, when there was complete obstruction of the bowels to a point above the rectum. In the mean time she was seen by Dr. Willard Parker, who diagnosticated fecal fistula into the bladder. At the autopsy the rectum was found to be cancerous, and obstructed below the point at which it opened into the bladder. The ileum opened into the bladder, and also the colon at two points.

One peculiarly interesting point in the history of the case was, that she would pass *large quantities* of fecal matter from the bladder, the urethra being considerably dilated, so as to permit the

passage of the accumulated fecal matter without much pain. In that manner she emptied her bladder perhaps four or five times during twenty-four hours. When, however, gas entered the bladder and was expelled through the urethra, it gave rise to extreme pain. The same fact had obtained in another case of like character, which had fallen under his observation.

Another interesting point was the fact that, although the contents of the bowel found their way into the bladder, when water was injected into the bladder, it did not find its way into the alimentary canal. That fact was explained by the existence of an oblique opening from the bowel into the bladder, a valve-like formation, so that the fluid in the bladder was not able to enter the bowel, although the contents of the bowel could pass into the bladder.

SARCOMA OF THE KIDNEY IN A CHILD.

DR. SKENE presented a third specimen, which was interesting because of being very unusual.

About the first of last January, he was called to see a child three years and three months old, which appeared to be suffering from malarial fever, with some disturbance of the digestion. The case was treated in the usual manner, as there was found, upon examination of the abdomen, what was supposed to be a moderately enlarged spleen. The general condition of the child improved to such an extent that medical advice was discontinued. But notwithstanding that, the supposed enlargement of the spleen not only did *not* diminish, but steadily increased. Soon, emaciation became marked and progressive, and as the emaciation increased, the size of the abdomen increased. The tumor commenced in the left side of the abdomen, was irregular in shape, and solid to the touch. During the progress of the case, two or three attacks of peritonitis occurred, but soon subsided. The child was subjected to different plans of treatment, but without benefit, and finally died from exhaustion. At autopsy, a tumor was found in the abdominal cavity, and occupying the region of the left kidney. It was regarded as a *sarcoma* of the kidney, and weighed five pounds and nine ounces. The diagnosis of sarcoma of the kidney was based upon the rapid growth of the solid tumor. The other organs were healthy.

APOPLEXY OF THE UMBILICAL CORD AFTER BIRTH.

DR. MUNDÉ presented the abdominal portion of an umbilical cord. He saw the child in his service at the Maternity Hospital, soon after its birth, and found the house surgeon tying the cord a second time, hemorrhage having occurred after the application

of the first ligature. Two days after he saw the child, when the nurse directed his attention to the peculiar appearance of the portion of cord remaining. It was about two and a half inches in length, and one and a half inches in diameter. His first exclamation was, "apoplexy of the umbilical cord." It then occurred to him that it might be a case of congenital umbilical hernia, but a more careful examination excluded that condition. The child was exsanguinated. The cord had a mottled appearance, and the odor from it was very offensive. The integument upon the abdomen above the cord presented a peculiar appearance, and the superficial veins were much enlarged. The explanation given by Dr. Mundé of the condition of the cord was, that from some cause the portal circulation had become obstructed, and the consequence was rupture of the umbilical vein, and extravasation of blood into the tissues of the cord. He had not been able to find a report of a similar case. The cord dropped about the sixth day, and the child was doing well. The mother was syphilitic.

DR. GILLETTE thought Dr. Mundé's theory regarding the condition found was correct.

TREATMENT OF THE UMBILICAL CORD WITHOUT LIGATURE.

DR. LEE asked for experience with reference to treating the umbilical cord without ligature. In a paper published by Dr. King, of Washington, the attention of the profession had been directed to non-ligation of the cord; and the author had claimed for it the advantages that the navel had a much better formation, and that there was less irritation than when a ligature was employed. The plan was to tear the cord through roughly, when a few drops of blood would ooze out, and then the hemorrhage would cease altogether.

DR. LUSK remarked it was a well-known fact that, when the cord was cut, it would bleed; whereas, when it was torn, it would not bleed. He had seen a number of cases in which the woman was delivered on the street, and in which the cord was torn across, but no hemorrhage followed.

DR. SKENE referred to the experience of Dr. Clarke of Brooklyn, who had adopted the treatment by non-ligation in a number of cases, and had reached the conclusion that the method had no advantages whatever over that ordinarily employed.

The argument in Dr. King's paper was based on analogy, and he reasoned that because the cord was not ligated in the lower animals, the same plan of management would be best for the human infant. The reasoning, however, was fallacious, because some of the lower animals, the cow for example, separate the cord by chewing it.

DR. MUNDE thought it would be difficult to tear the cord apart certainly at a point close to the fetal abdomen where it is usually tied; and DR. LEE thought it could be easily done, in some cases at least.

DR. PALLEN remarked that for many years he had covered the stump of the umbilical cord with a rubber thumb-stall, which protected it from irritation, and remained on without any fetor whatever.

DR. L. A. STIMSON read a paper on

ABDOMINAL DRAINAGE OF OVARIAN CYSTS.

The following is a brief extract :

The paper began with an analysis of Mr. Spencer Wells' ovari-otomies, with reference to the existence or absence of adhesions, showing that the mortality in the cases in which adhesions existed was about twice as great as in those cases in which adhesions did not exist. It also appeared from the statistics that the ratio of mortality was not diminishing in Mr. Wells' practice, and the inference was drawn that, with the methods now in use, no better results could be obtained in those cases. The results of vaginal drainage, or abdominal drainage in the so-called abandoned or incomplected ovari-otomies, were then quoted to show that the mortality in vaginal drainage had been very small, and that the mortality in incomplete ovari-otomies in Mr. Wells' experience was less than that of complected ovari-otomies, in cases complicated by adhesions.

The author of the paper proposed, therefore—basing his opinion upon the recorded results of those two methods of drainage—after the abdominal incision had been made in any proposed ovari-otomy, that the next step should be to determine the absence or existence of adhesions without rupturing any of them. To that end he proposed that the sac should be drawn into the abdominal incision, emptied, and maintained there while a search for adhesions was made by introducing the hand into the emptied sac. The search was to be supplemented, if necessary, in a case of adhesions to the movable viscera, by the conjoined use of a steel sound outside of the sac, or by drawing the sac out through the incision until the adhesions became visible. If adhesions were not found, the ovari-otomy should be completed; if they were found, as much as possible of the sac should be removed, and the adherent portion stitched fast to the edges of the abdominal incision, and the case treated by abdominal drainage. All that should be done under antiseptic precautions from the very commencement.

The paper being before the Society for discussion,

DR. PALLÉN remarked that the proposition made by Dr. Stimson was not a new one, but was one which had been rather abandoned than otherwise. The first ovariectomy he ever made was an abandoned operation, in consequence of diffuse adhesions. The sac was emptied, and the edges of the opening were stitched to the abdominal wall.

The second operation of the kind which came under his observation was performed by Dr. Hodgen, of St. Louis. The third was made by himself, and in all three cases the patient died within forty-eight hours. All the antisepsis possible was employed, but it did not prevent the patients from dying, evidently from septicemia. On the contrary, the first successful ovariectomy he had was in a case in which the tumor was attached to the liver and to the stomach, and to almost everything in the abdominal cavity, and in which he put fifteen ligatures into the mesentery. The patient was upon the table two hours and forty-one minutes, and yet she made a good recovery.

While the arguments advanced were certainly most ingenious and worthy of serious consideration, his experience had been rather against abdominal drainage of ovarian cysts.

DR. LUSK remarked that, in those cases in which the pedicle was extremely short, or where, to avoid enucleating the cyst, or to avoid putting in a great many sutures, the tumor had been drawn up and sewed into the abdominal wound, the results had been extremely bad.

DR. STIMSON remarked there would be one very great difference in the two classes of cases, for the operation he proposed would be aseptic from the beginning.

DR. PALLÉN referred to one case which was managed successfully by abdominal drainage. The operation was made by Dr. Sims, and under the care of Dr. Goldthwaite, who washed the cavity out several times daily. The patient made a happy recovery.

DR. STIMSON thought that, in the cases mentioned by Dr. Pallén, death could be attributed more to the exposure of the abdominal cavity and to manipulation, than to drainage of the sac.

DR. PALLÉN remarked that, in the first operation, the manipulation was very slight, and yet the patient died of septicemia within forty-eight hours.

DR. LEE remarked that detection of adhesions from the inside of the sac, as mentioned by Dr. Stimson, was practically difficult, if not impossible. Detection of adhesions outside was not difficult, and, theoretically, it would seem to be easy to detect them from the inside, but practically it was almost impossible. It was only when the adhesions were short and dense that detection of them through the wall of the sac was possible. But there were cases in which he thought Dr. Stimson's suggestions would be productive of great benefit. These were the cases where there were extensive peritoneal adhesions in front, dense and hard, or where the adhesions were mostly in the pelvis. It was also applicable in another class of cases—namely, where there were secondary cysts, either of a dermoid character or semi-solid, and when, from

inability to reach the pedicle of the main cyst, it was necessary to leave a suppurating mass at the bottom of the pelvis.

DR. WALKER remarked there was one class of cases in which the method of treatment suggested would be impossible. The case which formed the text for the paper was one of that class—namely, those cysts which had such friable walls that they would not bear handling. In the first exploration made in the case reported, by attempting to lift the abdominal wall from the tumor, there was at once a gush of purulent-looking fluid. It was first supposed that it came from a localized peritonitis, but it was evidently the result of rupture of the cyst. The cyst-walls were so friable that the sac gave way upon very slight manipulation. There were many such cases in which it would not be possible to determine beforehand the condition of the wall of the cyst.

DR. HUNTER thought it would be absolutely impossible to detect adhesions through the cyst-wall, where the sac was dense and thick.

DR. WEIR, an invited guest, remarked that he had no experience which would bear upon the subject except from analogy. He had lately had occasion to open a hydronephrotic cyst, and had found it very troublesome to preserve a condition of asepsis. He thought it would be impossible to maintain it in abdominal drainage of an ovarian cyst. He also believed that the advantages arising from thorough antiseptic measures more than compensated for the danger attending separation of adhesions, alluded to by the author of the paper.

DR. SKENE remarked that doubtless the treatment of a certain class of cases, according to the method mentioned in the paper, had not received trial under the same favorable circumstances as had ovariectomy, with all the improvements in modern surgery. There were three points claimed by Dr. Stimson which might be modified, and those were: 1st. That by drainage the patient was guarded against the occurrence of peritonitis. 2d. Against the occurrence of septicemia. 3d. That it was always curative. He had seen something of the plan of treatment, and was satisfied that there was a liability to peritonitis—perhaps not so great as in cases in which extensive adhesions were broken up—but that it occurred frequently after the most careful drainage was effected. He was also satisfied that septicemia occurred, and there was a great liability to its occurrence, for the reason given by Dr. Weir. It was also a fact that cure was not always complete. Dr. Skene then referred to a case in which drainage was kept up for two years. The sac was washed out daily, was injected with iodine, nitrate of silver, carbolic acid, and a variety of agents, but the patient finally died of phthisis. Whenever the injections were made potent, the patient always had an attack of inflammation which rendered the use of opium necessary to subdue it. The paper, however, would doubtless prove valuable in calling the attention of surgeons to this method of operation, which held an important place in the treatment of ovarian cysts.

Stated Meeting, May 6th, 1879.

DR. A. J. C. SKENE, *President, in the Chair.*

FIBRO-CYSTIC TUMOR OF THE RIGHT OVARY.

DR. CHAS. C. LEE exhibited a fibro-cystic tumor of the right ovary. The patient, a married woman thirty years of age, was admitted to the Woman's Hospital, April 12th, 1879. Her health was good up to five years ago, when she became pregnant, which was about a year after her marriage. As her pregnancy did not follow the usual course, she consulted a physician, who informed her that she had an abdominal tumor. She, however, got along pretty well until three months ago, when she slipped and fell upon the pavement. She was seized with pain and had all of the symptoms of peritonitis. She recovered in two weeks. When presented to Dr. Lee by Dr. Hanks, the abdomen contained a large solid tumor. The nature of the tumor was obscure. The only opinion which was positively given was by Prof. Thomas, which afterwards proved to be correct, namely, that it was a fibro-cystoma of the uterus. The patient was retained in the hospital for the purpose of operation. While she was undergoing preparation for an operation, she suddenly developed alarming symptoms; one day her temperature reached 105°, pulse 130 to 140 per minute. High temperature and rapid pulse continued, and as she was steadily running down, it was decided to give her the chance which an operation might afford. She was gastrotomized on the 28th of April, the operation being done with great facility. There were no pelvic adhesions. The origin of the tumor was not clear. Meanwhile the pulse was feeble. General peritonitis with recent deposits of lymph existed, and when it was attempted to remove the tumor, it was found impossible to separate it from the uterus. The right cornu of the uterus was included in the neck of the tumor. The patient survived the operation, but during the night a condition of apparent secondary shock came on, and she died twelve hours after the operation. During the operation Dr. Lee thought he discovered both ovaries, but at the autopsy, which was made twelve hours after death, no trace of the right ovary could be found; the left was enlarged and thickened. It was thought that the tumor, which was extremely elongated and enlarged, had undoubtedly sprung from what had been the right ovary.

The rupture which occurred when the patient fell, three months ago, was clearly shown on the specimen at a point where one of the large cysts had ulcerated through. The other abdominal organs

were normal and healthy, except the right kidney, which was interesting on account of having a double ureter opening by a common orifice into the bladder. The kidney was apparently healthy.

DR. SKENE inquired of Dr. Lee what he regarded as the immediate cause of death.

DR. LEE replied that he regarded shock as the immediate cause of death.

DR. NOEGGERATH remarked that he had seen and examined the patient a week before the operation, and he gave it as his opinion that the tumor was an ovarian sac, in which there were hard masses; or, that the abdominal cavity was plugged up by an agglutination of the intestines. His reason for this opinion was that, upon careful percussion upon the left side, he found a spot the size of a man's hand which was clearly tympanitic. When the operation was performed, it became clear that neither of the above conditions existed. The cyst had broken into the abdominal cavity and its contents undergone decomposition, filling the cystic cavity with gases which gave rise to tympanites in the exact locality determined upon before the operation. There was one evidence which proved that the tumor was ovarian, even if no post-mortem examination had been made, and that was the peculiar condition of the left ovary, characteristic of the first stage of cystic degeneration. Under such circumstances the ovary was enlarged in all its diameters, but especially in its antero-posterior diameter. Furthermore, the ovary was naturally an elongated smooth body, but this appeared on the outside to be an agglutination of a number of small diplois; the ovary looked very much like a small brain. Another fact was that the ovary was white—bloodless. That condition of the ovary was recognized only when both ovaries were diseased, and whenever it was found in one ovary, you could be sure that there was degeneration of the other.

OBJECTION TO THE USE OF PILOCARPINE.

DR. JENKINS called attention to one objection to the hypodermic injection of pilocarpine in any case, and that was the flooding of the lungs by an excessive bronchial secretion.

DR. THOMAS thought the objection worthy of serious consideration. He had seen a case of uremia towards the end of the eighth month of pregnancy, where labor was brought on and the child delivered alive, the mother suffering greatly after the birth of the child and becoming comatose. Jaborandi was tried by the rectum, and resulted in a profuse bronchorrhea which was at first attributed to an alteration in the circulation. The fluid was excessive, and the noise produced in respiration resembled the so-called "death rattle."

DR. CHAMBERLAIN spoke of an asthmatic patient suffering from excessive dyspnea, to whom he had given pilocarpine, com-

mencing with a small dose, one-tenth of a grain by the mouth. This did not produce any effect, and the dose was increased, but no effect from its administration was observed. The drug was then used hypodermically four times in one-fourth grain doses. The constitutional effects of the drug followed within ten minutes after its injection, and the asthma, which seemed to be rather irregular in its manifestations, was no worse after the use of the pilocarpine.

SECONDARY HEMORRHAGE—TRANSFUSION OF BLOOD—DEATH.

DR. THOMAS related the history of a case which terminated fatally, in consequence of secondary hemorrhage. The patient was a lady who had been married ten years, but had never been pregnant. About two or three months before Dr. Thomas saw her, she was taken suddenly with violent vomiting which continued for a long time, the life of the patient during the two months being barely sustained by rectal alimentation. She became almost completely exhausted by inanition. Her menstrual periods became irregular, and a tumor showed itself in the right iliac fossa. She had pain down the thigh and over the abdomen. Her brother, who was a physician, and who had charge of the case, had several consultations with neighboring physicians, who agreed that she was pregnant and resorted to the usual methods for arresting vomiting, but all to no avail. As a last resort, she was brought to New York on a bed, continuing to vomit all the while. Dr. Thomas found upon examination a tumor in the right iliac fossa, the size of a large orange. The uterus was pressed over to the left side and backward. Dr. Thomas concluded that the case was one of extrauterine pregnancy, or one of cyst of the broad ligament.

A consultation was proposed, in which Drs. Noeggerath and Barker participated. Dr. Barker was of the opinion that the case was one of fibrous tumor. Dr. Noeggerath agreed with Dr. Thomas without having communicated with him. The friends of the patient were informed that her condition was so bad that an operation offered the only possible chance of recovery, and even that was not promising. They consented to an operation, and the patient was placed under ether. Introducing Sims' speculum, Dr. Thomas cut into the sac with the thermo-cautery, and from eight to twelve ounces of fluid gushed out. He then passed his hand in, but found no evidence of hemorrhage. The following day the patient was free from nausea and vomiting. The pulse, which was 140 to 130 before the operation, began to improve in quality and decrease in quantity. The second day she felt much better; the third day she improved still more.

On the fifth day, Dr. Thomas went to see her, and found her sitting up in bed, and she told him that she was out of danger, and so he thought. The sac was thoroughly carbolized through a tube which passed into it. On the evening of the fifth day, she was suddenly taken with a sharp hemorrhage which became profuse. Although the attending nurse was a trained one, she did not know what to do. Eleven physicians were summoned one after another before one was found at home. The eleventh physician saw the patient, found her in a state of collapse, and tamponed the vagina. Towards morning Dr. Thomas saw her, and then felt sure that the only chance of saving her life was by transfusion.

He preferred milk, but his efforts to obtain a cow at this time of the day were of no avail. Dr. Joseph W. Howe was called, and gave it as his opinion that there was no possibility of a successful issue of the case. Dr. Thomas thought that most of the cases which he had transfused with milk were as unpromising as the present. In this instance blood was used by Dr. Howe, but it was so hyperinotic that it was with difficulty that four ounces of it were strained through silk. Colin's apparatus was used. When Dr. Howe had pumped in the first syringe-ful, it was noticed that the patient suddenly changed in appearance and that her pulse disappeared. The second syringe-ful was pumped in, and she died. At the time the blood was introduced, her pulse was distinct, but from the introduction of the first syringe-ful, it was no longer perceptible, and with the introduction of the second syringe-ful, the patient died very suddenly. Dr. Thomas thought the lesson to be drawn from this case was, to fear hemorrhage in these cases, and to be prepared for it for many days after operation; also that the incandescent knife does not prevent secondary hemorrhage.

DR. SKENE inquired as to how rapidly the first syringe-ful was introduced.

DR. THOMAS replied that it was introduced promptly.

DR. SKENE referred to a series of experiments by Dr. Hutchinson, of Brooklyn, in which the latter had obtained the best results by using small quantities of blood or milk, and injecting them very slowly.

DR. NOEGGERATH remarked that he could not understand why blood should act differently from milk in such a case. He had had a good deal of success in the transfusion of blood. He explained the cause of death after the introduction of blood, by stating that the heart was in the same condition as a man travelling a long, long journey, who in order to reach the end of his journey, made short and rapid steps. When the blood came in

contact with the inner or lining membrane of the heart, the heart would act, and that one movement would paralyze it; any other movement would kill in the same way. As blood was more stimulating than milk, it was probable that it would be more likely to produce death. He thought, even in a case where a patient was not so much exhausted by the loss of blood as the one related by Dr. Thomas, that, owing to the greater stimulating effect of blood, milk would be the safer fluid.

DR. SKENE inquired of Dr. Lusk what physiological experiments had shown in reference to blood and other fluids as cardiac stimulants.

DR. LUSK replied that he knew of no experiments save the oft-repeated one of exposing a frog's heart, and observing the greater stimulating effect produced on it by blood than by water.

DR. CHAMBERLAIN referred to a case of transfusion by Dr. Howe, in which human milk was used, and in which the pulse disappeared, but returned after eight or ten minutes.

PROLONGED GESTATION.

DR. CHAMBERLAIN related the history of a case of prolonged gestation. The patient, a young woman, was delivered of a child in March, 1877, which she nursed until June 3d, 1878. She was a perfectly healthy woman, and had her periods once in twenty-eight days. On the 3d of June, 1878, she observed a vaginal hemorrhage which continued two hours. This she considered as an indication for weaning her child, and began to do so. Very early in July she was troubled with nausea. About the 1st of October she remarked that she had not felt life. On the 20th of October she felt life, and fixed her confinement to occur the first week in March. Dr. Chamberlain was notified, but she passed that period, and went on up to date, May 6th, twenty-five days short of a year: eleven calendar months and three days, or twelve lunar months had passed since menstruation. Dr. Chamberlain had previously examined the patient, and found the head presenting, and had determined to bring on labor on the 7th of May. This he did not have the opportunity of doing, for in the afternoon of the 6th of May, he was summoned to attend the lady in confinement, and delivered her at 5 P.M., the labor having lasted three hours. The appearance of the child was confirmative evidence of prolonged gestation. The posterior fontanel was very well closed, and the anterior one to a considerable extent. The skin of the child was thick and white, and had lost its reflex character. The child possessed a certain coördination of movements which Dr. Chamberlain had never seen in a child born at term. The doctor thought the end justified the measure of waiting.

Dr. Mundé reported a case of

PROLONGED GESTATION,

sent him by DR. E. N. LEWIS, of Carver, Minn.

"Mrs. D., æt. 34, married, and mother of four children. Menstruated on the 28th day of August, 1875; had connection with her husband second day thereafter, symptoms of pregnancy (morning sickness) manifesting themselves within ten days, there was no doubt that she was enceinte. Quickening took place at four and a half months, and everything being normal, she expected to be confined, at the farthest, in the early part of June. I contemplated visiting Philadelphia, but at her urgent request I remained to deliver her, and did remain until the 20th of June; then, there being no indication of labor, I started on my centennial visit, returning home on the 27th day of July. I found that she had not yet given birth to the child, nor did labor set in until the night of the 8th of August. Nothing unusual was encountered except a firmly ossified head, the fontanelles being firmly closed, though the head was small; no appearance of an over-developed fetus existed. The labor was completed in six hours; mother and child both did well. Taking the date of last menstruation to June 7th, 1876, would make 280 days, to August 8th, would make the time between menstruation and delivery 341 days."

DR. LUSK related the history of a case of pregnancy lasting the usual time, but where the woman missed two menstrual periods before conception took place, as showing that errors in estimating the duration of pregnancy are easily made.

DR. EMMET referred to a case of prolonged gestation which he had previously reported to the Society, the duration of which was eleven months.

Stated Meeting, May 21st, 1879.

DR. A. J. C. SKENE, *President, in the Chair.*

TRUE KNOT IN AN UMBILICAL CORD—FLOATING KIDNEY.

DR. PAUL F. MUNDÉ presented an umbilical cord that contained a true knot. The case was primiparous. There was nothing worthy of special note in its progress except that the soft parts were rather rigid, and it terminated in an ordinary and easy forceps delivery. As soon as the shoulders slipped over the perineum the cord rolled out in a large coil. It measured thirty-two inches in length, the average length being from twenty-two to twenty-four inches. The child was healthy and cried lustily. There

were no symptoms during pregnancy or labor which indicated any trouble with the cord, and from that fact, and also the fact that there was no evidence that the cord had been compressed at any point (the knot being comparatively loose), it seemed evident to Dr. Mundé that the knot was formed during the latter days of pregnancy, or during labor. The fetal heart beat at the rate of 132 to the minute, and a random diagnosis of male child was made, which happened to be correct. Spiegelberg had remarked that a true knot in the umbilical cord occurred in one in two hundred cases. Dr. Mundé had attended 2,000 cases of labor, and that was the second knot he had found. He had also examined the records of 3,000 other cases, and in these no case of knot in the cord had been reported. He therefore believed that it occurred much more rarely than claimed by Spiegelberg.

On the day following confinement, Dr. Mundé, while palpating the abdomen, felt a tumor in the left hypochondriac region. Upon subsequent and more careful examination he found it to be movable, kidney-shaped; he could feel a hilus distinctly, and percussion over it gave resonance, except at its upper portion, where the percussion note was tolerably dull. He inclined to the opinion that the tumor was a floating kidney. The question of interest in such cases was, What was the etiological relation of labor and delivery to floating kidney? Dr. Mundé was not aware of any observation on that subject, except the eleven cases reported by Keppler in Langenbeck's *Archiv*, who assumes that the displacement of the kidney is produced during labor. Exactly how the one depended upon the other, if at all, had not been decided.

NEW PESSARY.

DR. WM. M. CHAMBERLAIN exhibited specimens of pessaries which were made of a combination of finely-braided brass wire coated with a compound of India-rubber. Dr. Chamberlain claimed for them that they were less rigid than hard-rubber instruments, less irritating than soft rubber, and could be easily moulded by simple pressure. He believed that the instrument was useful for a certain class of cases in which the hard-rubber pessary was not well tolerated. He thought it would never absolutely replace the rigid instruments, but there were many cases in which something partially rigid was required, and for such he regarded it as valuable.

DR. SKENE remarked that an apparent objection to the pessary was that it did not seem to possess sufficient staying power.

MALIGNANT OVARIAN TUMOR.

DR. T. ADDIS EMMET related a case as follows:—A woman, 42 or 43 years of age, had, apparently, always been in good health up to two months ago when, as she supposed, she took cold, and soon after noticed that she had enlargement of the abdomen, also some swelling of the feet. Dr. Emmet saw the patient about one month after she first noticed the abdominal enlargement and the dropsy, and at first thought it quite probable that she was suffering from some renal trouble. On palpation, however, he discovered, rather accidentally, that by making firm pressure, and removing the hand suddenly from the abdomen, a hard mass could be distinctly felt. That was the only indication at that time of enlargement of the right ovary, and it was not larger than a man's fist. One month subsequently, he removed the tumor, which was about eight inches in diameter and evidently malignant in character (sarcoma). The abdomen at the time of the operation was distended by fluid to a size corresponding to that seen at full term of pregnancy. He had never seen a case in which a tumor of that size, and essentially solid, had developed so rapidly, and it was to the rapidity of the development that he especially wished to direct attention.

DR. CHAMBERLAIN referred to a case reported by Dr. Thomas, in which the growth of a cysto-sarcoma, weighing nearly eight pounds, took place, so far as discomfort to the patient was concerned, within eight weeks.

LONG-WORN PESSARIES.

DR. C. S. WARD referred to a case in which the patient had worn a flattened, bi-concave disc with a central perforation for five years, not only without inconvenience, but for a considerable share of the time she had also worn another pessary. When the original pessary was removed, it was found to be greatly incrustrated.

DR. MUNDÉ remarked that he recently removed a glass pessary of similar shape that had been worn about five years, but it was not incrustrated. The entire fornix of the vagina, however, was a mass of granulations, and about two months were required to heal the wound. The healing of the ulceration was attended by cure of an old prolapsus of the uterus. In another case a patient wore a Thomas' cup-pessary for five months—contrary to directions—and when she then presented herself, one hinge of the pessary had perforated the recto-vaginal septum. The small opening closed in two weeks.

DR. CLEVELAND referred to a case in which a pessary was worn three years without discomfort, and it was not at all incrustrated.

DR. HUNTER remarked that he had seen several cases in which

pessaries had been worn constantly for a year without becoming incrusted.

DR. EMMET referred to a case in which a sponge, so arranged as to make a Physic's pessary, had been worn constantly for eleven years, and had not given any discomfort until within the last eighteen months, when a condition of the parts developed that had been regarded as epithelioma.

DR. CHAMBERLAIN referred to a case in which he found a hard-rubber pessary that had so imbedded itself into the tissues that only about one-third of the instrument was exposed. In order to remove it, he divided the instrument with a pair of bone-forceps, rather than cut the fibrinous band and tissue with which it was surrounded. The woman was unable to tell when it was introduced.

DR. MANN referred to a case in which a block-tin pessary had been worn so long that about two-thirds of it was covered by granulations. The procidentia for which it was worn was cured when the granulations had healed.

DR. SKENE referred to a case in which a patient wore a glass globe in her vagina for nine and a half years, not only without discomfort, but positive relief from distressing symptoms accompanying prolapsus of the uterus and the vagina. At the end of that time she lost the instrument, and again sought relief when, upon examination, it was found that the parts were perfectly normal, and the prolapsus had been considerably relieved. Another glass globe was introduced, which the patient wore with perfect comfort and relief to all her symptoms. Dr. Skene questioned whether there was at the present time any instrument which would completely relieve, for so long a time, the discomfort accompanying a prolapsus of the uterus and vagina in an old, hard-working woman as that employed. If the parts were well-supported by a pessary, the perineum would, after a time, regain its tonicity.

Stated Meeting, June 3d, 1879.

DR. A. J. C. SKENE, *President, in the Chair.*

PROCIDENTIA UTERI CURED BY OPERATIVE PROCEDURE.

DR. PALLAN presented a patient, æt. 70 years, upon whom he had operated with success for the relief of procidentia uteri of many years' standing. The operation consisted in dissecting the posterior wall of the vagina from the anterior wall of the rectum, throwing it forward upon the anterior wall of the vagina, and afterwards uniting the parts as in the operation for ordinary laceration of the perineum. In that manner the vagina was prolonged and thrown forward, forming a miniature shelf upon which the uterus rested. The operation was illustrated by means of diagrams.

CONGENITAL LIPOMA.

DR. A. JACOBI exhibited a specimen of congenital lipoma which he had removed from a patient in Mt. Sinai Hospital. So far as the literature of the subject was concerned, it was very scanty, the cases observed being small in number. Only a few cases of uncomplicated congenital lipoma had been reported, and mention of such cases had for the most part been incidentally and in connection with other subjects. The earliest monograph upon the subject was written by Phillip von Walter in 1814, who described a case occurring in a young girl. The treatment consisted in removal of the tumor. Even that case was not entirely uncomplicated, for the tumor, to a certain extent, was united to the skin. The same author brought a number of other cases, partly from his own experience, but mostly from the literature of lipoma, and none uncomplicated. There was complication either on the part of the skin or on the part of the vascular system. He denominated those cases as *nervus maternus lipomatis*.

One such case had been described in the thirtieth volume of the *Monatsschrift für Geburtskunde*.

A number of other cases had been described, in which there were accumulations of fat, but they were associated with hypertrophy of limbs or of bones. Cases had been reported in Langenbeck's *Archiv* (7th volume), in which there was hypertrophy of bones and enlargement of limbs, besides the accumulation of large masses of fat.

Dr. Jacobi thought it but natural that congenital lipoma should exist more rarely than almost any other kind of tumor. The large majority of congenital tumors were cell-growths; carcinoma very frequently, sarcoma frequently. The earlier a tumor developed in infant life, the more apt it was to be a cell-growth. Fatty globules were not found in the embryo until the end of the fourth month, and the tissue in which the fat-cells were deposited was the embryonic cellular tissue, filling first with myxomatous substance and then with fat. The appearance of fat was a late feature in the development of the fetus, and therefore it was natural that tumors developed in fetal life should not be fatty in character. A number of years ago, he saw what he regarded as a congenital lipoma, apparently as large as a hen's egg, and located in the median line over the sacrum of a child only a few weeks old. It was a clinical case. Removal of the tumor was not at once undertaken, but the parents were asked to return at an early date with their child for further examination and diagnosis. Shortly after, a medical gentleman, at that time one of his clinical assist-

ants, saw the child, and feeling certain that he had to deal with a lipoma, cut into it and found it complicated with spina bifida.

A few weeks ago he saw a case of lipoma in a child three years old, sent to him by a gentleman connected with one of the dispensaries. It was situated in the femoral region, and from the entire aspect of the case, and from its nodular feel, he diagnosticated lipoma, and proposed to remove it. Subsequently the case fell under the observation of another gentleman who made a diagnosis of abscess; but Dr. Jacobi believed that abscess could safely be excluded because the tumor had been observed for more than two years. Three cases, sent by Dr. Shaffer of the Orthopedic Dispensary, came under his notice a few days ago, and he advised removal of the tumors.

The specimen presented consisted of a lipoma that extended over the back from the spinous process of one ilium to the other, about ten inches in length, and was from three to four inches in width. Above it was another mass, much softer, and less elevated above the surface. Below it, in the left gluteal region, was another mass, also very soft. It seemed to him that he had to deal with three lipomatous masses; the central one being the larger and capsulated, the other being diffused and not capsulated. He resolved to operate upon the larger median mass, and an incision about eight inches in length was made. No capsule was found, and the only limitation found was upon the right side over the immediate neighborhood of the longissimus dorsi, and it was there cut from the spinous processes. It was found difficult to remove the mass from the spinous process—especially from the right—not feeling absolutely positive that he had not to deal with a small spina bifida which had healed. He did not feel sufficient confidence to go directly down upon the left side, and accordingly allowed a small quantity of the fatty growth to remain—a mass probably one inch horizontally, and an inch and a half vertically.

The specimen was presented because of the scarcity of cases of uncomplicated congenital lipoma. Probably two or three would cover the entire number.

DR. H. J. GARRIGUES then read a paper entitled:

CASE ILLUSTRATING THE DANGER OF STEM PESSARIES.

“Mrs. M., 35 years of age, gave birth to two children, six and four years ago, and had a miscarriage two years ago. After her second confinement she suffered from retroversion of the uterus, for which she was treated by her family physician, who replaced the organ, introduced a closed lever-pessary, and applied tincture of iodine to the inflamed interior of the uterine cervix and body.

Her menstruation having been rather scanty of late, and suffering from back-ache and pain in the left iliac fossa, she applied to another physician who, on the 27th of February last, in his office, introduced a laminaria tent, and directed her to come again the next day, when he replaced it by a galvanic pessary, composed of an intrauterine stem of copper and zinc, $2\frac{3}{4}$ inches (7 cm.) long, $\frac{1}{4}$ inch (6 mm.) thick, and of a vaginal, flat, hard-rubber circular disc, $1\frac{3}{8}$ inch (21 mm.) in diameter, to whose circumference were fastened by hinges three wings of the same material, and of such a size that, when they are opened, the diameter of the vaginal support becomes $2\frac{1}{2}$ inches (6.3 cm.). It weighs 6 drachms 1 scruple and 5 grains (25 grammes).

Having introduced this instrument, the doctor told her that she might do what she liked. So she went to a party and indulged in the pleasures of dancing.

The next morning at six o'clock, a few hours after she had returned home, she was seized with violent pains in the abdomen, headache, and vomiting.

Two days later, on the 4th of March, she came under my treatment. I found the pulse 112, the temperature $102\frac{1}{4}^{\circ}$, the uterus lying retroverted, the fundus being in the hollow of the sacrum and the os, behind the symphysis pubis, directed forward. There was slight swelling on both sides. The mobility could not be ascertained on account of the extreme tenderness. The abdomen was a little swollen and tender on pressure in the hypogastric region, but soft.

In the evening her pulse was 132, and her temperature rose to 104° . She could not pass urine.

The next day the cervix only could be felt. The rest of the uterus was imbedded in a large, soft tumor, which filled the upper part of the pelvis. The uterus was immovable. I omit all details as of no consequence, and give only the outline of the disease. During a week she improved. Then diarrhœa set in repeatedly, and was sometimes accompanied by vomiting. She again lost her appetite, and complained of pains towards the anus. At the same time the vagina became edematous. On the 19th a soft point, large as the tip of the finger, could be felt in the posterior lacuna, and the following days decided fluctuation could be felt both from the vagina and from the rectum. This fluctuating part was on both sides, and below on the posterior wall of the vagina, surrounded by a very hard mass, filling up the upper part of the pelvic cavity. This hard tumor extended so far upward and backward that the finger in the rectum could not reach

beyond it. On account of the stoutness of the patient the contour of the tumor could not be made out through the abdominal wall. The 23d I made an incision into the abscess in Douglas' pouch from the vagina, and evacuated a tablespoonful of pus. A fortnight later a sound entered still two inches from the point of incision. At the same time the uterine began to be movable. On the 8th of April menstruation occurred, and has since then been regular. The exudation disappeared gradually, the left side being the last place where it was felt. On the 30th it had all been absorbed, and she was allowed to lie on a lounge. But she was not at the end of her suffering yet.

On the 6th of May, during her second menstruation, she was taken with rigors, her pulse beat 136 to the minute, and her temperature rose to $104\frac{1}{2}^{\circ}$. The cause of this was an acute attack of cystitis (frequent micturition, pain in bladder, dark, turbid urine full of bladder epithelium), which again kept her in bed for a week. On the 25th I introduced a uterine sound with the utmost care, and found a slight curvature turned backward and toward the left, showing that the retroversion had changed into a retro-lateroflexion. The sound entered $2\frac{1}{2}$ inches (6.5 cm.). The uterus was brought into position without the least pain or resistance. The following day she went out. An elastic, closed lever-pessary was introduced, and she is now well.

Reviewing this history we find then that the patient had pelvic peritonitis, ending in an abscess and cystitis, that she had to be treated during three months, that she suffered intense pain, and was for weeks in danger of her life.

Remarks.—My remarks on this case fall under four heads: 1st, I object to the use of the uterine stem in general; 2d, to the kind used in particular; 3d, to its employment in this case; and 4th, to the way in which it was applied.

I have been fair enough to tell the family in question that the treatment adopted was a legitimate one, and one used by great authorities; but now, addressing a body of medical men—yes, of physicians who make a specialty of the treatment of diseases of women—I will not withhold my own opinion that the dangers attending the use of the intrauterine pessary are so great as to more than counterbalance its advantages and, as a rule, disproportionate to the gravity of the disease from which it shall give relief.

At the meeting of the American Gynecological Society at Boston, in 1877, I was given an opportunity to tell what I had seen of the use of stem pessaries in different European countries. I have never used it myself—except once Squarey's soft rubber pessary—

and hope to resist the temptation to do so, which I, without doubt, often will feel, as I have often felt it before, and I should indeed be very glad if this paper should restrain young general practitioners, who have no personal experience on this point, from availing themselves of so dangerous a means. As to gynecologists *ex professo*, I do not expect my words to have much weight with them; but that is also superfluous, since some of the most prominent men of the country in this branch have denounced this practice. In the meeting alluded to, the late Dr. E. R. Peaslee¹ declared himself 'decidedly opposed to the use of the stem pessary, except in certain forms and degrees of flexion.'

He rejects it entirely in retroflexion. In the lesser degrees of ante flexion he rejected it likewise almost absolutely. He would use it only in some cases of extreme ante flexion.

Dr. T. Gaillard Thomas² likewise admitted its use only in 'certain rare cases of uterine flexion—none of version.'

Dr. T. A. Emmet, in his newly-published work,³ says: 'Members of the profession are frequently advocating the use of the stem pessary, regardless of the experience of those who have gone before them, until they, in turn, have to learn that they have not been wiser in their day. As soon as the true condition comes to be appreciated, the use of the intrauterine stem will be abandoned as a most irrational instrument. Experience will at last teach every one that no permanent benefit is ever derived from its use, that no degree of tolerance is ever established, but that sooner or later, in almost every case, mischief will result.'

My own experience has been that, in almost all cases of flexion and version, the symptoms of which the patients complained could be relieved by other means, such as internal remedies, local applications, scarifications, baths, and vaginal pessaries, or by incisions and very moderate dilatation. In the few cases in which these means do not succeed, I think it is better to let the patient suffer than to expose her to the risk of the intrauterine pessary, unless the suffering be such that it makes life a burden.

The particular kind and specimen of uterine stem employed in this case is, of all those I have ever seen, the most objectionable.

I present here half a dozen of such instruments from the clinics of London and Berlin (two of Meadows', Squarey's, Simpson's, and E. Martin's), and at a glance you will perceive the difference. It weighs more than all the others together. It is a *quarter of an inch*

¹ Gynecological Transactions, 1877, Vol. II., p. 231.

² Ibidem, p. 234.

³ Emmet: Principles and Practice of Gynecology. Philadelphia, 1879, p. 352.

longer than the uterine cavity, not only in general, but as found in this particular patient, and it is not at all likely that a severe perimetritic inflammation should have brought on such a shrinkage of the womb. It is immovably fixed to a very large disc. It is made of a material that is corroded by the uterine mucus or by the acid formed by the electric current that is set up. Even when compared with Simpson's, such as it was used in the Berlin clinic in rare cases (generally Martin used that of bone), and with which it has the materials in common, it has a considerably more murderous appearance.

In order to be as little dangerous as possible, an intrauterine stem ought to be made of a material that is not corroded by the vaginal secretion, preferably glass or hard-rubber; it ought to have a small support in the vagina, and one that will allow the uterus to move, which is, as it were, the physiological right of this organ that is constantly pushed backward by accumulating urine, forward by the feces, downward by the contracting diaphragm, and upward during coition.

But even if we would allow the use of the intrauterine stem in general, and even if the instrument were the best of its class, I should still object to its use in this case. We all know, from sad experience, how exceedingly delicate, sensitive, nay, almost capricious a thing is a uterus in or around which any kind of inflammation is going on. Now, this lady had been under treatment for endometritis, and a pain in the left side that may have been due to some other inflammatory process, either a salpingitis or an oöphoritis.

Finally, if a physician, notwithstanding all this, found it justifiable to use the intrauterine stem, he ought at least to have done so with the greatest precaution. A man like Goodell, of Philadelphia, who uses the intrauterine stem to some extent, never introduces it otherwise than in the home of the patient,¹ and Dr. Noeggerath inserts it even, as a rule, whilst the patient is under the influence of an anesthetic,² in order that the patient may become 'thoroughly impressed with the importance of the proceeding, and not go to balls and on shopping excursions within the first week.' It is so much more reprehensible that the physician in question introduced tent and stem in his office, as his patient was a married lady in easy circumstances, abundantly able and willing to pay for his visits. Worst of all was his assurance that she might do what she liked. Olshausen, in Halle, told me, indeed, in 1873, that the stem was worn by peasant women who worked in the field all day, but at the same time he admitted to have had

¹ L. c., p. 242.

² L. c., p. 240.

seven cases of pelvic inflammation in eighty-eight cases treated in this way. If the intrauterine stem must needs be used, it ought at least to be done with the full knowledge of the risks incurred, and with a serious warning to the patient. It ought to be introduced in her home: she ought to lie down for several days: a thread ought to be attached to the pessary, and the patient directed to draw it out on the first appearance of any pain. With such precautions, the results will certainly be less apt to be disastrous, and if this mode of treatment has only been resorted to when all others had failed, and when the indication had been pressing enough to justify some risk, and if all precautions have been taken, then, but only then, a man may exonerate himself if he is unfortunate enough to see harm arise from his interference."

DR. M. A. PALLÉN remarked that he had not used a stem pessary during the last ten years, and that his experience militated against the possibility of maintaining a flexed uterus in position by the instrument. He had seen two cases in which death followed the introduction of a stem pessary. In one case, death occurred within four days, and the post-mortem revealed the fact that the instrument had been pushed through the wall of the uterus, and had given rise to metro-peritonitis.

In the other case, the woman was impaired by the stem pessary, it consequence of a fall, and died about two weeks subsequent to the receipt of the injury.

DR. NOEGGERATH remarked that he should have changed the title of the paper by Dr. Garrigues, and instead of "The Danger of Stem Pessaries," he should have said "The Danger of the Injudicious and Unwarrantable use of Intrauterine Pessaries." There was no remedy employed to the uterine mucous membrane, concerning which a paper might not be written, showing the dangers attending its use. Therefore, he would not say that it was the pessary of itself that did the harm, but rather that it was the injudicious use of the instrument, and especially in the hands of inexperienced men. So it was with every form of operation and method of treatment in the hands of the inexperienced, and death might follow their adoption. He saw a patient, a year ago, who had been examined simply by conjoined manipulation in the office of one of the most eminent gentlemen in the city, and the examination was followed by an attack of metro-peritonitis, from which she had not yet fully recovered. Now, if means which must be employed with care and circumspection were employed as had been stated, it was simply a case of malpractice. As to the capability of the uterus to wear pessaries, he related a case. Two years he began treating a sterile woman for dysmenorrhea. All the remedies commonly used were employed without success, and he thought he would prepare the uterus to receive a stem pessary, by the regular introduction of a uterine sound. For certain

reasons the neck was incised, the endometritis was treated and removed, and a stem pessary made of lead, which was less harmful because less irritating, was introduced and worn with safety, and with the result of removing all menstrual pain. The patient had become pregnant. He did not employ the stem pessary to rectify malposition of the uterus, but for other reasons, two in number :

1. To cure the hyperesthesia of the mucous membrane, and
2. To prevent too violent contraction of the circular muscular fibres—the sphincter muscles.

Although by the use of the stem pessary the lumen of the uterine canal was diminished, the patient menstruated without pain.

Therefore, the indications for the use of the pessary were simply symptomatic. During the last eight or nine years he had not had any accident follow the employment of a stem pessary, because he had exercised the greatest care in their use. Before that date, he met with unfavorable results, because proper caution was not exercised. One case in which there was a lurking perimetritis, and one other were the only ones in which accident had followed the use of stem pessaries, in his hands, in more than one hundred cases. One point of importance was to impress upon the patients the fact that they were wearing something which was dangerous, and that they must be very careful, lest they do themselves harm. After one period had passed without harm coming from the instrument, giving rise to no pain, it might be worn for months or even years without special danger. Pure silver intrauterine pessaries could be worn without becoming incrustated. The pessary was an instrument that must be resorted to with the same caution as any operation about the cavity of the uterus. When so used it was a useful instrument, and one which he did not wish to be deprived of in gynecology. The instrument he employed was exactly $2\frac{1}{8}$ in. in length, and was made of lead, with Conant's rings of hard-rubber, the shape of the pessary being that of the cavity of the multiparous uterus, excluding the cornua.

DR. MUNDÉ remarked that when he employed a stem pessary he attached a string about the bulb, and told the woman to remove the instrument at once if it produced pain that increased in severity. Most of the stems he had seen were too long, and he never used one longer than $2\frac{1}{8}$ or $2\frac{1}{4}$ inches. He asked Dr. Noeggerath what the indications were for removal of the pessary, and how long he would allow it to remain in case the woman suffered pain?

DR. NOEGGERATH replied that the question was not easily answered. Some persons bore a great amount of pain without complaining, while others complained seriously upon the slightest inconvenience, and, therefore, the special directions and management must be modified for each case. Of late he had not introduced a stem pessary in his office, but went to the patient's house, and insisted that she keep her bed for a few days. She was then gradually allowed to get up and go about. The instrument should be used as carefully as a piece of compressed sponge or any similar

and dangerous measure. The stem should always be curved according to the curve of the uterine cavity; for, if straight, it certainly would rub against the uterine wall, and immediately become a source of irritation.

DR. H. T. HANKS remarked that the conditions which Dr. Noeggerath proposed to correct by using the stem pessary were not those for which the instrument had usually been recommended.

DR. NOEGGERATH remarked, in explanation, that he did not consider antelexion as a cause of dysmenorrhea or sterility, but at the same time, in most cases of dysmenorrhea and sterility, antelexion was present. He did not lay any special stress upon the displacement, while other gentlemen did regard it as the chief indication for treatment. He did not use the term antelexion as indicating a pathological condition; therefore, he did not treat it, except as it was coexistent with dysmenorrhea, etc. Other gentlemen used the stem pessary to correct the dislocation of the uterus; he allowed the dislocation to remain, and, as far as possible, treated the disease which coexisted with the displacement.

In closing the discussion,

DR. GARRIGUES said that, as Dr. Noeggerath had reproached him for the title of his paper, he would state that his first idea was to call it "A Case illustrating the Reckless Use of the Stem Pessary," but, upon second thought, he had preferred the other, because his chief aim was, through the widespread transactions of the Society, to impress upon the mind, especially of young general practitioners, the danger attending the use of the stem pessary in general. It was, indeed, a fact that any gynecological proceeding occasionally had done harm, and that, nevertheless, we resorted to the same means, but the difference was that, while a million vaginal examinations might be made, and the sound used thousands of times before mischief occurred, we had seen from Olshausen's statistics that he had had seven times perimetritic inflammation in eighty-eight cases, that is to say, that nearly one out of twelve patients had a disease that put her life in danger. Dr. Noeggerath had admitted that, in early years, he had had accidents referable to the stem, and that he now only resorted to it with the utmost care. Other gynecologists, with large experience, such as Dr. Emmet and Dr. Thomas, had given it up altogether on account of the mischief it had done.

Dr. Garrigues did not condemn its use altogether. Besides for intolerable pain, it might perhaps be used in a case of sterility, in which it was particularly desirable to have issue. But any one who used it should know that it was a dangerous remedy, and the patient ought to be informed that she ran some risk by its use.

Dr. Mundé read a communication for Dr. N. R. DERBY, of Bergen Point, N. J., on

A CASE OF PUERPERAL ECLAMPSIA CURED BY THE CHLORAL AND BROMIDE TREATMENT.

"On the 6th of April, 1878, at 9 A.M., I was called to see Mrs.

M—, a primipara six and a half months. Was informed that on the 4th she had recurring pains with a slight colored discharge. On the 5th, was about the house until noon, when pains located in the pit of the stomach returned, accompanied with vomiting. She was quite comfortable through the night; but at 5 o'clock on the morning of the 6th, she had a strong convulsion, which had continued with more or less severity until my arrival. Noticing symptoms of more decided convulsive action, with flushed face, loss of sight, full pulse, and loaded bowels, I bled her 14 ounces, and gave a purgative enema, immediately after the action of which I gave her an enema of

Chloral hydrat..... 3 i.

Potass. bromidi..... 3 ss.

Aq. font..... 3 i. M.

as recommended by Dr. Goodell, of Philadelphia; also ordered ice to the head and heat to the extremities. These measures produced quiet, and in less than an hour sleep, which continued for four hours. The patient remained comfortable through the day, with the exception of headache. Slight trace of albumen in the urine. Gave in the evening one-quarter drop of croton oil, and repeated in an hour, which produced two copious stools.

On the morning of the 7th, she was quiet, but did not recognize her friends. At 4 P.M., had another convulsion, which was immediately followed by the chloral and bromide enema. In half an hour the spasms ceased and the patient slept quietly some hours and then awoke quite rational. This state of things continued until the morning of the 8th, when I found some dullness of intellect, inability to recognize friends, and some convulsive movement. The child was alive. Ordered the chloral and bromide enema through the day as needed, and chloroform if required, with ice to the head.

The urine showed some albumen, but was of sufficient quantity.

At 9 P.M., the patient was doing well, knew the doctor and her husband, but could not remember the name of either one. Pulse 80 and quiet. Took beef-tea and milk freely. Bowels had moved through the day, with the knowledge of the patient, urine albuminous. Ordered

R Chloral hydrate..... 3 iiss.

Potass. bromidi..... 3 iij.

Aq. font..... 3 i.

Syr. zingib..... q.s ad 3 ij.

Sig.: Teaspoonful every two hours, and chloroform if necessary.

On the morning of the 9th, I found the patient doing well, and she continued quiet through the day. In the evening had some

headache, but no trouble with the sight, urine albuminous and rather scanty. Ordered hot applications to the back and gave

R Potass. carb....	.....	3 i.
Tr. colchici sem.....	.....	3 ij.
Inf. juniperis.....	.....	5̄ ij.
Syr. zingib.....	.....	q.s. ad 5̄ iv.

Sig.: Tablespoonful every four hours.

From this time the patient gradually improved, until she was able to be about the house. On the morning of the 15th, I was called early to visit her, and found her with pretty severe labor pains, uterus low in the pelvis, with the os dilated and the breech presenting. I took extra care to save the membranes from rupture, having regard to the life of the child, and succeeded in preserving them entire until the body was delivered, then ruptured and evolved a living child. No symptoms of eclampsia in the mother.

The child weighed two and a half pounds. It was *without washing* immediately wrapped in a warm cotton-flannel cloth, then covered also thickly with cotton batting from the neck to below the feet, and over all, including head, a piece of flannel which was pinned on snugly, so as to exclude all cold air. This dressing was retained for three weeks, only opened quickly, by the fire, to remove any soiled clothing. The child was fed cracker and rice-water for a few days, then the mother's milk, until gradually it gathered strength enough to nurse. It is now over a year old and healthy. The mother is also perfectly well. In this case there was no reason, connected with the patient's condition on the morning of the 14th, why she should not go to the full term of gestation. Having a suspicion as to the cause of the labor, a few questions brought to light the fact that the day before, being Sunday, and the husband having no other work on his hands, insisted upon enjoying his marital rights; that pains commenced shortly after, and had continued until my arrival on the morning of the 15th. The fortunate result of this case, and also one other which has fallen to my care during the year, where the chloral and bromide was used with success, will lead me to resort to this remedy, in increased doses if necessary, with great confidence."

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, May 1st, 1879.

The President, LEWIS D. HARLOW, M.D., in the Chair.

Dr. Washington H. Baker exhibited, for Dr. J. F. WALSH, of Camden, N. J.,

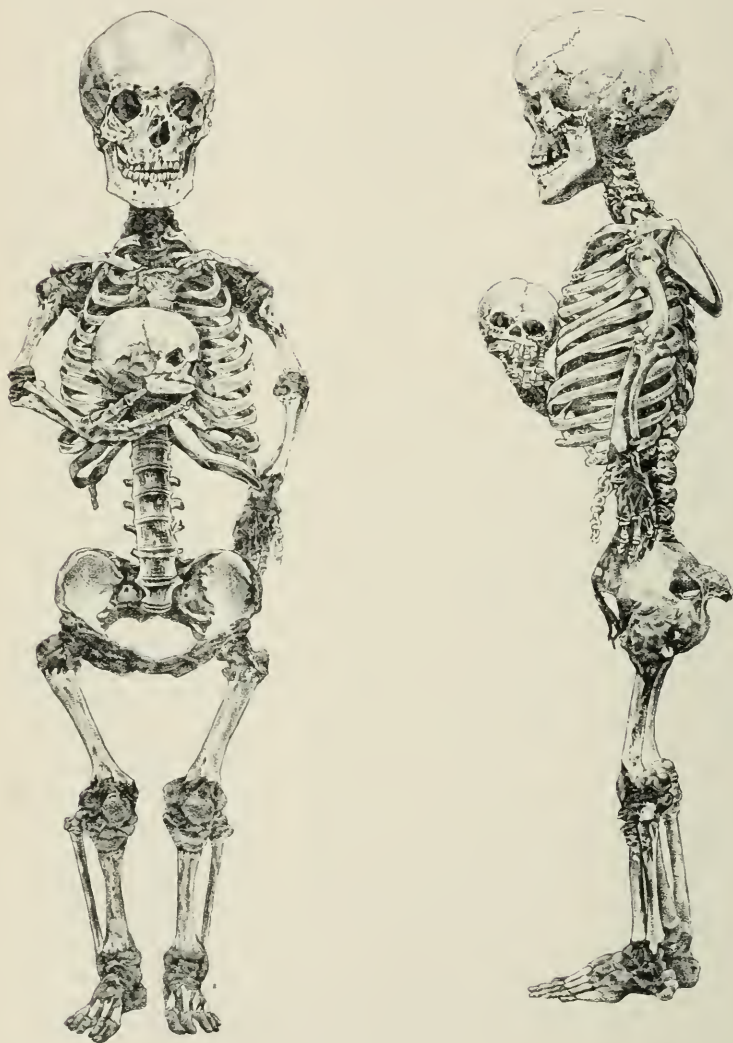
THE SKELETON OF A RACHITIC WOMAN, AND THE SKULL OF THE
FETUS THAT HAD BEEN REMOVED FROM HER BY CESAREAN
SECTION,

and read the accompanying letter:

NORFOLK, VA., Dec. 15th, 1875.

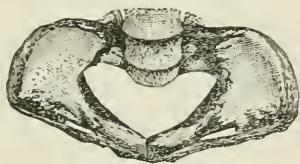
DEAR DOCTOR:—As it is your desire to have a report of the case of M. A., I undertake to write as much of it as came to my knowledge. I was in no manner connected with the case; I was present, by invitation, at the imperfect post-mortem examination which was made two days after M. A.'s death, the object of which was, I think, to ascertain the diameters of the pelvis; but my own object was, if I could, to get the woman's body and the child, which were kindly given to me by the medical gentlemen who had charge of the case. They were all strangers who came to Norfolk during the fever of 1855, which swept off a large part of our population, and nearly one-half of the established members of the medical profession, who fell its victims in the discharge of their duty.

It was my desire at first to do no more than prepare the pelvis and the child's head in the usual way, but, on ascertaining the subject to be decidedly unique, I concluded it would be worth the trouble to make a full ligamentous preparation of the entire skeleton, which I accomplished with difficulty, as the subject was exceedingly fat; and although only three feet six inches high, it weighed eighty-six pounds. All the capsular and other ligaments were preserved entire, and still retain the bones in situ. In consequence of the mass of fat on the back, the sacro-sciatic ligaments were hard to be discovered, and had to be traced out with the handle of the scalpel. Several years passed before the oil of the bones had come away, but the skeleton is now dry, and it stands on the floor without a prop.



RACHITIC CESAREAN SECTION (WALSH)

As there was no engraver in the city, I had two photographic views of the skeleton taken while it was fresh from the table. They give some idea of its curious deformities. The experienced anatomist at once misses the sacrum in the photograph No. 1, where it is entirely out of view. He also misses the ischium and the obturator foramen, and sees nothing of the symphysis pubis as in the well-formed skeleton; but, on turning from the photograph to the skeleton, he at once finds that the sacrum, instead of being curved, is straight, and goes directly backward, making almost a right angle with the lumbar vertebra. The bones of the ischia he finds also take the same direction backwards, so that neither the tubers nor the obturator foramina are seen. For the same reason, the reader will readily comprehend that the orifice of the superior strait, instead of looking upwards, looks forward; or, to speak more scientifically, its plane is perpendicular when the skele-



ton is erect, and consequently its axis is horizontal. Now, for the sake of brevity, I say that the inferior strait, as to position, is but little different from the superior, and, therefore, when the woman was on her back, the external organs of generation were behind and underneath. Such being the case, we discover at once a cause of difficulty in the operation for craniotomy which was attempted, and of which I have to give a brief account. The side view No. 2 has some points of interest. The head of M. A. is shown to be very large in proportion to the rest of her body, and is really as large as that of most women. The deformity of her arms is well shown, and that of the pelvis also.

In the next place I undertake to state what I know of M. A.'s case: In the spring of 1856, she was found to be in labor. Her physicians having discovered the diameters of the pelvis to be unusually small, and the head of the child large, concluded that delivery could not be accomplished by the hand or by forceps. They, therefore, undertook to perform craniotomy, but had to abandon it (as one of them said to me). "*because we could not keep the head of the child steady enough for the operation.*" I apprehend, therefore, they had no idea of the deformity of the pelvis, as above stated, for, as I was informed, they placed the woman, as is usual, on her

back, which position, in their case, was most difficult and inconvenient. They proceeded no further than cutting through one of the parietal bones into the brain, besides which I found no evidence of an attempt to remove the brain or break up the head. I did not see the instruments that were used, but I apprehend they were not such as would suit the case, and if that were so, it would not be at all strange or remarkable, for the little creature was nothing but a helpless thing, who found a home in a house of prostitution, where all her misfortunes fell upon her. As the operation was commenced and carried so far as the destruction of the child's life, it is to be regretted that it was not carried further. It does not appear to have been impracticable, if we can judge from all we see in the size and shape of the pelvis, in which we found, at the post mortem, the antero-posterior diameter $1\frac{3}{4}$ inches, and the transverse $4\frac{1}{2}$ inches, and at the lower strait the antero-posterior $3\frac{1}{2}$ inches, and the transverse $4\frac{1}{4}$ inches. It is true, the child's head was large, but the bones yielded very easily to pressure. The child's head, as measured by one of the physicians and the operator, is given thus: Longitudinal diameter, $4\frac{3}{8}$ inches; parietal, $3\frac{3}{4}$ inches; chin to occiput, $5\frac{5}{8}$ inches. The child weighed 6 lbs. 1 oz.

As to the Cesarean operation, in this case, I have no remarks to make. The woman survived it nearly three days.

I am very truly your friend and obedient servant,

MAURICE FITZGIBBON.

In order that pictures might be taken, it was found requisite to clean and whiten the skeleton, which was almost black. Fortunately, this has been done to perfection by a new chemical process, and the bones are now very light in color, and free from grease. We may congratulate ourselves as a Society on the possession of so fine and rare a Cesarean specimen.

DR. ROBERT P. HARRIS, finding the record of the operation to be very incomplete, kindly offered to search out the defective points, and has made the following report :

The white dwarf, Mary Ashberry, was operated upon by the late Dr. John B. Holmes, of Charleston, S. C., assisted by Drs. C. F. West, of Hyde County, N. C., and J. Eccleston Marsh, of Maryland, all of whom returned to their respective homes soon after the subsidence of the yellow-fever epidemic, in Norfolk. Dr. Holmes died a few years ago, and I am, therefore, unable to state as yet how long labor had existed when the operation was commenced ; but I have no doubt it was much too long for the safety of so small a subject.

Of 110 Cesarean cases in the United States, 23 have been

dwarfs, and 17 of them white. Seven of these women were from 3 feet to $3\frac{1}{2}$ feet in height, and the balance from the latter to 4 ft. 8. The shortest woman saved was 3 ft. 9, and in labor but $4\frac{1}{2}$ hours. The heaviest fetus weighed 14 pounds, the mother being 4 ft. 4; one of 9 pounds was taken from a mother of 3 ft. 2, who was but 70 pounds in weight. One woman of 40 inches in height bore a child 20 inches long that lived. A six-pound fetus is not an unusual product in a diminutive dwarf.

Twelve children and six women were saved by the twenty-three operations. Sixteen operations were late in performance, the latest being four days. Four children were saved out of the seven delivered from the most diminutive women. In nearly all the fatal operations in dwarfs, death is produced by peritonitis or exhaustion.

A parallel case to this of Norfolk occurred in Ohio, in 1840, the woman being 3 ft. 6, stout built, and with a conjugate of $1\frac{3}{4}$ in. She was in labor 16 to 18 hours, and so much exhausted when Dr. Falconer was called in that he thought the case almost hopeless. The child was saved, but the mother died of peritonitis on the second day. In 17 women whose pelves were measured, but two had a conjugate of 2 inches, the balance varying from $\frac{5}{8}$ to $1\frac{3}{4}$.

The subject of Dr. Holmes' operation was of the height of a girl six years old, as will be seen by the illustration given. She had a very thick skull, and her bones, except those of the pelvis and upper extremities, were strongly made. Her humeri were bent forward above the elbow, and arms unusually short. She had a reniform pelvis, evidently the result of rachitic deformity, and the sacro-vertebral angle was nearly a right angle. This threw the pelvic outlet very decidedly backward, so that the pudendum must have been entirely between the thighs, and the direction of the vagina backward when she stood erect. Although not impracticable, as Dr. Fitzgibbon remarks, I do not think a delivery by craniotomy or cephalotripsy advisable in the cases of dwarfs, with pelves under $2\frac{1}{4}$ to $2\frac{1}{2}$ conjugate diameter, as such are more likely to recover after the Cesarean operation, if performed in good season.

There were three dwarfs operated upon in Virginia, in the year 1856, with the loss of two mothers and one child. The only early operation saved both woman and fetus, which might have been the case in Norfolk, had there been the proper attention given in time. As the woman died of peritonitis on the third day, the operation was, in all probability, too late, as of the twenty-three dwarf cases referred to, peritonitis followed but one early delivery.

Exhaustion from labor commences very soon in dwarfs, sometimes coming on in two hours; hence the importance of an early use of the knife, to avoid death from shock, peritonitis, and septicæmia. We have had death from exhaustion follow an operation performed after a labor of only eight or nine hours in a rachitic cripple, in whom there were found, after death, evidences already of commencing peritonitis. The time in labor, as noted in twenty dwarfs, was as follows: *2 hours, 1; *†4½ hours, 1; *†10 hours, 1; *†12 hours, 1; *8 or 9 hours, 1; *16 hours, 1; *†24 hours, 2; *30 hours, 2; *†38 hours, 1; 42 hours, 1; 50 hours, 1; 56 hours, 1; 2 days, 1; †3 days, 3; 3½ days, 1, and †4 days, 1.

The skeleton was placed in the museum of the Society.

Stated Meeting, June 5th, 1879.

The President, LEWIS D. HARLOW, M.D., in the Chair.

DR. THOMAS M. DRYSDALE read a paper on

MULTILOCULAR OVARIAN TUMORS MISTAKEN FOR CANCER OF THE OMENTUM, AND AGAIN FOR UTERINE FIBRO-CYSTIC TUMORS.—DIAGNOSIS ESTABLISHED BY THE OVARIAN CELL.—DOUBLE OVARIOTOMY.

Dr. A. G. B. Hinkle brought me a bottle, April 15th, 1879, containing a fluid which he had just removed with the aspirator from an abdominal tumor which an eminent gynecologist, who saw the case in consultation, considered a cancerous tumor of the omentum. The fluid resembled arterial blood in color and general characteristics, except that, on shaking it, a number of small gelatinous masses of a dirty-white color were seen scattered through it. The fluid did not coagulate, and after standing a day or two, a slight deposit formed in it. When examined by the microscope, the ovarian cell was found to be present in great abundance. This fact was communicated to Dr. Hinkle.

I was sent for May 16th to see Mrs. B., in consultation with Dr. H., who told me that he had been called to see her three months before, when he found her suffering from pain over the left groin, pain in the back, and cramps in the lower part of the abdomen. He was told that her menstruation lasted seven or

* Those marked with a star recovered, with the exception of one of the 2-hour cases.—The 38 hour case was quite exceptional, as the membranes were unruptured. †Children saved—30 hours, 1; total 11; one soon died.

eight days, was accompanied with clots, and returned every two or three weeks. Dr. H. examined her, and found a small tumor in the left inguinal region. On examination by the vagina, this tumor was found to fill Douglas' cul-de-sac, was much larger behind than before, felt like a uterine fibroid, and was movable. The sound entered the uterus two and a half inches and, when *in situ*, on moving the tumor, the sound followed its motions. From that time she ceased to menstruate, became sallow and greatly emaciated, while the tumor increased rapidly in size.

On examination, I found a large tumor occupying the greater part of the abdomen, and reaching from the ribs on the right side diagonally downwards to the left inguinal region. Below this was another smaller mass which filled the inferior part of the abdomen half-way up to the umbilicus, and was separated from the one above by a deep sulcus. The tumors were movable to a considerable extent, and felt like uterine fibro-cystic growths. No fluctuation could be discovered. A vaginal examination proved the pelvis to be filled by the lower tumor. It was difficult to detect the uterus which was pressed closely against the pubic bone to the right of the median line. Very little cervix could be felt, but the os uteri could be just reached with the tip of the index finger. The sound entered four inches, and could be detected above and a little to the right of the symphysis pubis.

Although this growth had the history and most of the peculiarities of a soft uterine fibroid, yet I diagnosed a multilocular ovarian tumor, basing my diagnosis mainly on the fact of the existence of the ovarian cell in the fluid removed with the aspirator.

Previous to operating, I made a statement, giving the history of the case, and my reasons for considering the tumor ovarian. I operated in the presence of several medical gentlemen, amongst whom was the distinguished gynecologist who had pronounced the disease omental cancer, and another, the oldest living ovariologist, who, after a careful examination of the patient, said he considered the tumors uterine fibro-cystic.

The incision commenced half way between the pubis and umbilicus, and was enlarged until the lower tumor was fully exposed. Firmly adherent to its front aspect was the uterus, lying diagonally across the tumor with its left Fallopian tube and broad ligament drawn down towards the pelvis, while the right was stretched up to the upper mass to which it was firmly adherent, forming a bridge binding the tumors to each other. The right tube and ligament were greatly hypertrophied, and formed the pedicle of the upper tumor. The lower tumor was tapped with a large trocar, but the cysts composing it were so small that but a trifling amount

of fluid could be obtained. Its structure was very friable, breaking under the pressure of the fingers. The incision was enlarged upwards, exposing the larger tumor, which proved to be the right ovary. Sweeping my hand around this I succeeded in detaching all adhesions until one was reached on its posterior surface which bound it to the root of the mesentery. This was so firm that it was found necessary to dissect off and leave adhering a portion of the wall of the tumor. The mass was then removed, and its pedicle secured with a clamp. The lower tumor, which was adherent to the peritoneal surface in contact with it, was freed from adhesions and raised from the pelvis, when it was found to be the left ovary. A clamp was applied to its pedicle, and it was removed.

Thus the operation proved the diagnosis of multilocular ovarian tumor to be correct.

I have brought this case to your notice for the purpose of showing the value of the ovarian cell in the diagnosis of these obscure diseases. The mistake made in the diagnosis of the case by two of our most distinguished gynecologists has been dwelt upon, not for the purpose of criticising the error, but to show that even with their great experience it was impossible to arrive at a correct conclusion without the aid of the microscope.

Stated Meeting, July 3d, 1879.

The President, DR. LEWIS D. HARLOW, in the Chair.

EFFECTS OF POTASSIUM IODIDE UPON THE OFFSPRING OF A SYPHILITIC FATHER.

DR. J. L. LUDLOW narrated the history of a gentleman who had had syphilis previous to marriage. It was followed by disease of the osseous system of the head, with loss of hair and sore throat; the nose was very much reduced in size and sunken at the bridge. The outer table of the skull was much affected, and there were several bone ulcers penetrating the scalp. While this condition lasted, his wife had three abortions at early periods of pregnancy, Dr. Ludlow took charge of the case and administered very large doses of potassium iodide to the husband and smaller ones to the wife. This treatment was continued for a long time. Nine months after its inception pregnancy commenced for the fourth time and progressed satisfactorily to full term. A fifth pregnancy was terminated favorably a few months since. Both children enjoy perfect health, and are plump and large for their age.

DR. CHARLES H. THOMAS had had a case of syphilis of secondary type under treatment for six or eight months. In this case he had used neither potassium iodide nor mercurials in any form.

He wished to see what could be accomplished by treatment on general principles. The ground-work of his treatment was as follows: a daily hot bath was followed by a cold shower, and then after carefully drying the skin a thorough inunction of cod-liver oil was directed, together with the internal administration of cod-liver oil. Nine months after this treatment was commenced, conception occurred; the result was a boy, now twelve years of age, very well nourished, of fine spirits and in perfect health.

DR. ROBERT P. HARRIS read a report of

A CASE OF PLACENTA PREVIA TREATED BY WHAT IS KNOWN AS THE SIMPSON, OR PERHAPS MORE CORRECTLY THE KINDER WOOD METHOD; BY DR. W. S. W. RUSCHENBERGER, U. S. N., AT COLINA, CHILI, IN 1832.¹

DR. M. O'HARA wished to know whether there was any method by which the location of the placenta could be determined before labor.

DR. HARRIS stated that, in some cases, repeated hemorrhages during pregnancy gave warning of the location of the placenta; but in the instance just recited that symptom had not occurred. There had been nothing remarkable during the entire pregnancy.

DR. ALBERT H. SMITH remarked that it was satisfactory to know that a Philadelphia physician had practised Simpson's method of the treatment for placenta previa at so early a period. But the credit of placing the operation upon a physiological basis undoubtedly belongs to Dr. J. Y. Simpson. Earlier operators had removed the placenta because it was an obstacle in the way of the descending fetus. Dr. Smith had never met with a case of absolutely central implantation of the placenta. The entire separation of the placenta is probably the safest for the mother when rapid delivery can be effected, but it seriously compromises the life of the child. If one side can be separated and sufficient attachment allowed to remain to maintain the fetal circulation until delivery can be accomplished by forceps or version, the child's life may be saved without endangering the mother.

External palpation will reveal the position of the child and of the placenta, the presenting portion of the child will descend lower on that side of the uterus on which the placental attachment is slightest, and that is the side on which peeling is to be performed.

If no obstruction to the rapid descent of the child exist in the pelvis or its outlet, the operator may keep in mind the fact, proven by experience in hemorrhagic abortions, that as soon as the placenta is entirely detached from the uterus complete relaxation of the os will take place. If one finger can be, by any means, forced through the os, the peeling off of the placenta may be done as rapidly as possible, and as soon as completed entire relaxation will occur, full dilatability will result, and delivery may be hastened by either version or the forceps.

¹ See ORIG. COM., p. 736.

This relaxation of the uterus following immediately upon the complete separation of the placenta is a physiological fact, a clear theoretical indication for entire separation of the placenta, if we are sure that the child can be delivered quickly. But if a portion of the placental attachment can be left, the danger to the child is lessened, and by peeling off that side of the placenta whose margin is nearest to the rim of the os, allowing it to pass as a flap into the vagina, then by drawing down or pressing down from above the presenting part of the child, the detached portion of placenta will be so compressed against the rim of the os as to arrest hemorrhage while the operator quickly delivers by whatever means the conditions present may make most easy and rapid.

Dr. Smith advised the employment of the continuous hot douche, 115° F., to stop hemorrhage until other measures could be carried out, as it was free from danger. He had never had occasion to use it, as prompt delivery had been suggested in all the cases he had seen. He considered the douche much safer than the tampon, which cannot be too strongly deprecated. Death had occurred from internal hemorrhage, with no external show, and an unruptured ovum. He considered the tampon too dangerous to use even in hemorrhagic abortions, and has never so far used it to arrest hemorrhage at any period of gestation.

DR. RICHARD A. CLEEMANN had delivered a child in a case of placenta previa in which the implantation was not central. The child was dead when he was called in. He attempted complete separation of the placenta, but failed, and was obliged to deliver the child while the upper portion of the placental attachment remained intact.

DR. CHARLES H. THOMAS remarked that there were strong probabilities in favor of Dr. Smith's views of the efficacy of the hot douche in checking hemorrhage in placenta previa. He had been present recently at a plastic operation in which, in addition to a large denuded surface, the corpora spongiosa were necessarily wounded; although no artery was divided, the hemorrhage was excessive by a universal oozing from the large surface. Flannels wrung out of water as hot as the hands could bear were applied to the bleeding surface; the effect was remarkable and astonishing; the surface was whitened and blanched. In half a minute all bleeding had ceased. This case was a very severe test of the method.

ANTIGALACTICS, MAMMARY ABSCESS.

DR. M. O'HARA wished to make a few remarks respecting the asserted power of belladonna in suppressing the lacteal secretion. A few months ago, a woman in the eighth month of pregnancy came under his care with a threatened abscess of one breast; there was great constitutional effect with high fever, and the doctor, fearing a miscarriage, used every means that could be suggested to avert the threatened danger, but without effect. Belladonna in various forms was rubbed into the gland, iodide of potassium was given

internally, camphor and iodide of potassium with belladonna were also applied locally, but all without avail. The gland was then freely opened; but despite all precautions the miscarriage occurred. In consequence of the division of a large duct, a milk fistula was formed, a drainage tube was inserted, and efforts were made to heal the breast. To accomplish this result, it was necessary to dry up the secretion, and the means which had been previously used to stop the formation of pus were now resorted to to check the flow of milk, but without the slightest show of success, perhaps because the infant was nursed at the other breast.

The father wished the child entirely removed from the breast and ice applied, but the secretion was checked by placing her on low diet, the milk fistula healed entirely, and two months later the secretion had returned, the child never leaving the breast at any time.

Dr. J. L. Ludlow was called to the Chair.

DR. HARLOW had found good results in preventing threatened abscess and also as a treatment after opening, in the use of adhesive strapping and of a firm bandage or towel around the body to compress the gland. If a lump is felt at any time, immediately apply adhesive straps. A frequent cause of inflammatory trouble in the gland is

IRRITATED NIPPLES.

By this the doctor meant a red granulated appearance of the nipple with some turgescence, but without fissures. The latter might, however, complicate the former condition. This granulated condition caused great pain in nursing and also caused lines of heat and hardness which extended into the gland. For this condition the doctor recommended an application of a five-per-cent solution of carbolic acid in olive oil, and the use of a nipple-shield.

DR. O'HARA had tried compression faithfully in this case, but without effect. He now questioned whether it was possible to dry up the secretion in one gland, while nursing from the other.

DR. A. H. SMITH asked about the experience of the Society in strapping as applied to small tumors arising near the periphery of the gland; the lump is quite tender, treatment is applied and it is relieved, but returns and in spite of all treatment will finally break. This form of tumor is generally called a "cake" by the nurse. It consists of a localized inflammation around a milk duct near the base of the breast, and there is undoubtedly a small quantity of pus formed at the time the attention of nurse or doctor is first drawn to it. It occurs in women who are nursing and are doing well, and is sometimes the effect of an exposure to sudden chill. The old-fashioned "gathered breast" is very seldom seen at the present time.

DR. LUDLOW had observed the form of tumor alluded to by Dr. Smith, and did not now attempt to check it, but applied a poultice, a yeast poultice preferably, and lanced it as soon as possible. Dr. O'Hara's case is peculiar, because of the difficulty of suppressing the secretion in one breast, while nursing from the other. The doctor would, in such a case, attempt to curtail the quantity of milk. It is a well-known fact among dairymen that if a cow is but half-milked she will soon become "dry." If the same plan is followed with the diseased gland, and sufficient milk is drawn to remove all tension, the secretion will soon diminish in quantity. One frequent cause of abscess is the section and occlusion of ducts by the previous occurrence of the same accident. In all cases the lance should be used early, and the openings should be made in lines radiating from the nipple. As an application to the breast to assist in checking the formation of pus or the secretion of milk, he would recommend an ointment composed of :

Iodine.....ten grains.
 Camphor.....one drachm.
 Aleoholic extract of belladonna..... " "
 Compound resin cerate..... one ounce.

A frequent cause of sore nipples was a hard lump or scale of sebaceous matter and epithelium at the apex of the nipple, the result of friction by the clothing ; this scale is loosened by the child, and comes off, leaving a sore which is hard to heal. Dr. Fordyce Barker recommended for such cases a solution of nitrate of lead in glycerine. Dr. Ludlow preferred to use cold cream in place of the glycerine in this mixture, or to dust the nipples with a mixture of subnitrate of bismuth and lycopodium. For

FISSURED NIPPLES

he would recommend a horn cup or shield to be worn between the times of nursing ; this was suggested to him by the use, by an old nurse, of the half-shells of English walnuts for a similar purpose : they prevent the nipple and the fissure from drying. He would also recommend, in bad cases, a strip of silk gauze secured by collodion over the nipple, to bind it down, and so arranged that the child could nurse without removing it.

DR. A. H. SMITH recommended, as an application to irritated or fissured nipples, a solution of lead plaster in collodion made as follows :

Lead plaster.....two drachms.
 Ether.....half a drachm.
 Flexible collodion.....one ounce.

Powder the lead plaster, add the ether, and mix them well together before adding the collodion. It makes a creamy mixture and is to be applied with a brush over every portion of the carefully dried nipple with the exception of the opening of the milk ducts.

This application will also be found useful in the eczema of children, and is soothing in erysipelas.

DR. J. B. WALKER had devoted much time and care to the study of nursing affections of the nipples, while on duty as visiting physician at the Philadelphia Hospital. He had found the solution

Nitrate of lead.....six grains,
Waterone fluid ounce,

a satisfactory application to irritated nipples that were not cracked. If it is used early, fissures are not apt to occur, but when they are present, the application is of no use.

He had found the partial drawing of a breast once or twice a day, associated with pressure, the best means for drying up the mammary secretion.

DR. O'HARA, in a case of fissured nipples, had used with success a strong solution of tannin in glycerine : a solution of

Iodoformhalf a drachm, in
Collodion.....one ounce

was also very satisfactory, and relieved pain.

DR. W. T. TAYLOR thought it was requisite in all cases to wash the nipple well after the child had ceased nursing, and to dry it carefully before applying the wash. In his estimation, the Needham shield was one of the best means for either preventing or curing irritable or cracked nipples. If from any cause it became necessary to dry up a breast, he would use belladonna locally and iodide of potassium internally, and would purge freely. He considered saline purgatives as one of the most efficient agents in checking the secretion of milk.

DR. PARISH had observed in the Philadelphia Hospital a form of mammary abscess which seemed to be pyemic or septicemic in its origin. It occurred at the periods when puerperal fever was rife in the Hospital. A small nodular tumor would be first noticed, and it would be persistent in spite of all forms of treatment.

When it became necessary to open an abscess of the breast, he thought it was the best plan to cut through the skin only, and then use a grooved director to separate the tissues and find the pus ; the points of a pair of dressing forceps might be passed along the groove of the director, and be employed to enlarge the opening.

DR. O'HARA said he felt called upon to denounce the Needham nipple shield. No shield was useful, unless it fitted the breast and nipple to which it was applied, and he had met with but one woman whose breast fitted this pattern of shield.

DR. LUDLOW recommended the ordinary india-rubber nipple, applied by means of a metallic or wooden base to fit the breast. If the nipple is too soft, a piece of sponge may be inserted, to prevent its complete collapse on suction, and if the holes in it are too small, they may be enlarged or multiplied by the use of a hot needle.

DR. J. G. ALLEN said he was surprised that no one had called attention to the use of the fluid extract of phytolacea in the treatment of mammary inflammations. He had used it for a long time, and found it of very great service in some inflammatory troubles of the gland.

It should be borne in mind that there are several widely different forms and causes of mammary abscess. Often the inflammation originates in and is propagated from the nipple, apparently travelling up the milk ducts and involving one or more lobes of the gland. There are other cases, in which only a small lobe of the gland seems to be originally attacked with inflammation; sometimes, apparently, the mere result of a blockade of a small milk duct quite remote from and independent of any inflammation about the nipple, and sometimes again an inflammatory action is set up, almost exactly resembling that which results in boils and abscesses elsewhere, and these, though involving at first only a small portion of the gland, often become very extensive, intractable, and difficult to manage. In none of these forms of mammary abscess will the phytolacca be found of the slightest use whatever. There is, however, yet another very common form of inflammation of the mammary gland which, if not promptly and properly treated, is apt to result in very large mammary abscesses. The whole or a large portion of the gland becomes swollen and congested, apparently very much after the manner of the natural physiological engorgement preceding, or I might say attending the natural secretion of milk—yet the process seems to become arrested. It is not properly completed, little or no milk is actually produced, and the gland remains congested. These futile efforts to secrete milk are again and again made by the gland, and result only in greater and more hopeless congestion, soon running into a very high grade of inflammation, with ultimate formation of pus.

A somewhat similar condition of congestion may result from an attack of ephemeral fever. It is such conditions in which the phytolacca will be found useful—in fact, almost a specific. It should be given as early as possible in doses of from twenty-five to thirty drops at least four times in the twenty-four hours. He has seen enormous congestions of this character promptly subside under this treatment, even after two or three days of neglect, and sometimes even after the chill and throbbing pains supposed to mark the first stage of the formation of pus. Where the abscess results from causes similar to those producing abscess elsewhere, he knows of nothing whatever that will have much favorable influence over its progress. Where it originates in a sore nipple, something can occasionally be done by early efforts directed to healing the nipple. He knew of nothing, however, much more unsatisfactory than the management of sore nipples. It often proved one of the greatest annoyances we had to deal with. After a good deal of experience, and trials of everything he had ever heard of for sore nipples, he had settled down to very simple remedies. He had learned that cleanliness about the nipple was an extremely important part of the necessary treatment of sore nipples. Therefore, at the very first sign of any trouble of this kind, he insists upon having the nipples *always* washed after nursing (preferably with borax and whisky), and then *keeping upon it all the time between nursing*

a scrap of cotton cloth thoroughly saturated with castor oil. Then, in order to allow the nipple time to heal, he endeavors to have the application of the child to the breast carefully systematized. He directs that the child should be nursed as nearly as possible at regular intervals, six times in twenty-four hours—three times from each breast alternately. This leaves each nipple a continued rest of eight consecutive hours. In cases of mammary abscess, he does not believe in opening nor poulticing early. Extensive poultices early applied often have to be very long continued, and thus not only worry, fret, and wear out the patient, but irritate the skin, and really often cause an increase of the patient's distress and even of the size of the abscess, by increasing the amount of pus formed. He begins and continues as long as possible with anodyne ointments—belladonna and opium, with the compound resin cerate of the Pharmacopeia—and only resorts to poultices when the abscess is nearly ready to be discharged. In a few instances, where the pain has been very great, he has used morphia hypodermically near the base of the gland, carefully avoiding, however, piercing the gland itself.

He never opens, until he sees where it is a going to point, experience showing that many times after early openings, which are apt to be very painful, the abscess is but very imperfectly emptied, and nature has to provide other openings before all the pus can be drained off and recovery take place.

DR. O'HARA remarked that he had understood Dr. Allen to say that *phytolacca* would suppress the secretion of milk.

DR. ALLEN did not remember having said so. He did not think it would; but, on the contrary, while lessening the congestion, it caused the act of secretion to be perfected.

DR. O'HARA had tried *phytolacca* in his case, but derived no benefit from it. He thought he did right in opening early, to relieve pain and tension.

DR. ALLEN did not consider Dr. O'Hara's case a proper one for the exhibition of *phytolacca*.

DR. O'HARA could not see why, if it did good in some cases, it did not do so in all.

DR. WALKER wished to call the attention of the Society to a peculiar case of exanthematous disease, which he had diagnosed to be

TONSILLITIS WITH ROSEOLA.

The child had high fever, vomiting, and sore throat; on the second day the soreness of the throat had increased and the tongue had become red. On the third day, a bright rose-colored rash had shown itself on the abdomen and chest: the fever had subsided, but the throat was worse. The rash was in streaks, half an inch broad, punctate and erythematous; it differed from the eruption of scarlatina only in the shade of color, which was darker, and by being in streaks, with healthy skin between.

In another child, which had an attack of pneumonia, a similar rash was observed, and at the time there was neither fever nor sore throat. There were no cases of scarlatina in the wards before or after.

DR. D. MURRAY CHESTON presented to the museum a pair of HAYDEN'S OBSTETRIC FORCEPS, which were at least fifty years old.

DR. PARISH, Curator, said that there was in the museum a pair of forceps made after the pattern of Hayden, and which had cost a previous owner five thousand dollars damages in a malpractice suit.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Reported by C. O. WRIGHT, M.D., Secretary.

Stated Meeting, June 12th, 1879.

The President, DR. J. W. UNDERHILL, in the Chair.

DR. THAD. A. REAMY reported the following case, presenting the

SPECIMEN OF FATTY PLACENTA.

“Mrs. J., aged 27, married 10 years, wife of a well-to-do merchant, mother of three children, the youngest of which is three years old; consulted me June 1st, 1879.

I obtained from her and husband the following history: Four weeks prior to the date of this consultation, and when she supposed herself six months pregnant, she received a severe mental shock under the following circumstances. Sitting at her window, her little boy, seven years old, fell from the roof of an adjoining shed; alighting astride of, he was impaled upon a sharp picket fence, where he remained screaming and bleeding until released by a gentleman who ran to the rescue. The boy was severely though not fatally injured.

The mother was in perfect health. The shock, however, to her nervous system was terrible. About three weeks subsequently, suddenly all motions of the child in utero ceased; so active and violent had they been before and after the shock, that the woman marked most consciously the cessation. Within a few days she had the usual sensation of “*settling down*,” as women say, of the

uterus and contents into the lower belly. One week after she failed to recognize motion, was the time when I was consulted. My opinion was sought, first, as to whether the child was dead; secondly, if dead, what would I advise? She had been informed that the dead child would certainly poison her. On examination I failed to hear the fetal heart in any position, nor could I hear the placental souffle. As the woman was in perfect health, and as the proof of the death of the child could not be absolute and conclusive, I advised waiting, ordering that she go about her ordinary vocations as housewife, reporting to me immediately should she suffer from chills, fever, or any evidence of ill-health; and in case nothing occurred to report to me for another examination in ten days. She reported in ten days in perfect health. Had felt no motion. I was unable to elicit any evidence of fetal life; was urged to induce labor. Advised postponement for a week, on conditions before named. June 11th I was called at five A.M.; found the woman in labor, first stage not advanced. The first and second stages completed within three hours, with but little suffering. She was delivered of a partially decomposed fetus, apparently of about six and a half months' development. The amniotic fluid escaping had a somewhat fetid odor; scanty in quantity. The placenta, which I here show you in a most extensive state of fatty degeneration, was delivered spontaneously. There was but little hemorrhage. The uterus was well contracted, but within twenty-five minutes it relaxed and profuse hemorrhage occurred which, however, was promptly arrested by grasping the uterus with hand, and contraction was maintained by thirty drops fl. ext. ergot.

Three hours after delivery the patient suffered a pronounced chill, followed by pulse of 130; and at midnight temperature 106. Pain not severe over pubes, where uterus could plainly be made out. Ordered vagina washed out with sol. carbolic acid 1 to 100 of water. Gave 15 grams sul. quin. To have 20 drops Magendie's solution of morphia every two hours till free from pain. 12th, 7 A.M., pulse 130, feeble, temperature 103. Ordered whiskey. Continued morphia as patient had not slept. Vaginal injections continued every two hours; 15 grs. quin.

6 P.M.—Temperature 106½, pulse 140. Washed out uterus thoroughly, 1 part carbolic acid to 125 of water. Turpentine stupes to abdomen three hours after washing out uterus; temperature fell to 102, pulse to 108.

The case progressed favorably, although the temperature arose at three different times to 103 and pulse to 125 within the following three days.

The patient is now making a good recovery and is out of danger.

Points of Interest. 1st. Relations of the mental shock to death of the child, of special interest as the child did not die until about three weeks subsequently.

2d. The relations of shock, in this case, to the degeneration of placenta, especially interesting in point of time. If the placental degeneration originated in the shock, of which I have no doubt, it must have advanced with great rapidity to have reached its present exaggerated degree at the time of the death of the child. If the complete and universal degeneration observed in the specimen was not then completed, of course we must conclude that the process went on perhaps until time of delivery, and in all probability its completion, and not the dead child in utero precipitated the uterine contractions, and delivery. As is well known, in most cases of syphilitic degeneration of the placenta, delivery occurs when but a small portion of the organ has undergone the change.

The third subject of interest is the mode of septic infection. And here again the time when it was manifested is well worthy of note, viz., three hours after delivery.

It is well known that Schroeder and others deny that a dead child in utero can infect the mother, so long as the membranes are not ruptured, and air not admitted into the cavity.

Fordyce Barker, on the other hand, cites two cases occurring under his own observation, and he intimates that he has knowledge of others of like character, going to prove that rupture of the membranes and admission of air are not necessary to infection. Playfair holds the same views. It is certainly true, as to the case here reported, that no symptoms of infection were manifest prior to delivery; but developing in the very brief space of three hours thereafter, with a degree of violence presenting the gravest aspects.

The membranes ruptured but a few moments before delivery. It is well also to note that the woman is a multipara with ample pelvis, that the child was small, the labor easy and natural. It is, therefore, not probable that any special lesions of the parturient track occurred, offering raw surfaces of great extent for absorption, for the infecting material which may have developed after air was admitted. But the infecting virus, if sufficiently intense, need not be large in quantity, nor have a large extent of surface. Indeed, I doubt not it often enters through an unbroken mucous surface with effect, as in the well-known examples of syphilitic infection.

Finally the results of treatment are to my mind both instructive and satisfactory. I have on several occasions, here and in other places, testified to accumulated clinical proof in my hands, of the

value of large doses of quinine and opium in puerperal septicæmia. I have also before repeatedly tested the marked and decisive reduction of temperature, in cases of puerperal infection, following washing out the uterine cavity with antiseptic solutions.

This case is another most striking example of the good to be derived from the practice.

It is somewhat difficult to understand fully the *modus operandi* of an antiseptic washing out of the uterus in these cases. One would suppose that when the septic material has entered the blood in such quantity as to induce the violent toxic effects present, no agent, however powerfully antiseptic, applied locally as in this case, could produce such marked effects. These results seem to justify the presumption that upon the surfaces thus treated, local septicæmia is going on, constantly furnishing new material for the circulation, and that the process is suspended by the antiseptic. This is of course the commonly accepted explanation: and yet it can hardly be wholly satisfactory in a case like the one just reported; for there had been no lesions, no retained clots or placenta; and there was no discoverable uterine inflammation of moment.

I have sometimes believed that the soothing effect of the solution upon the broad intrauterine surface might have beneficial influences beyond those of an antiseptic character.¹

DR. ILLOWY thought the interval was too short within which to develop such marked septicemic symptoms by the mere absorption of decomposing animal matter. He was more inclined to the belief that septicemia in this case was due to the entrance into the circulation of poisonous gases developed in the putrid amniotic fluid.

DR. KEEBLER expressed himself as greatly surprised at the extreme degree of fatty degeneration undergone by the placenta in so short a time.

THE PRESIDENT.—“The old question as to the possibility of a dead fetus in the unruptured membranes infecting the mother is again raised by a consideration of Dr. Reamy’s case. It is a question which certain eminent authorities (Schroeder among the number) have decided in the negative. And yet I know, from what I have witnessed, that the maternal blood may be poisoned from this source.

I call to mind at present the case of a lady who, at the seventh month, while leaving a street-car, tripped and received a severe fall. After a few hours she seemed not to suffer any inconvenience, went about her usual avocations, but she felt no further motion of the child. Seventeen days subsequently she took suddenly ill with septicemic fever. A day or two later I was sum-

¹ Dr. Reamy during the discussion stated that he had seen cases of unequivocal infection occurring from a dead fetus before birth.

moned, labor pains set in, the membranes broke, followed by a gush of exceedingly offensive waters, and a putrid fetus was expelled. This patient suffered at the time from a high grade of septicemia, and a fortnight elapsed before convalescence was fully established.

Barker relates, in his book on *Puerperal Diseases*, two cases of a similar character occurring in his own practice, and doubtless most of us, upon referring to our case-books, would find proof confirmatory of the claim that the dead child may undergo putrefaction in the uterus to which there has been no access of air and, further, that such decomposed fetus may cause toxemia of the mother's blood.

From the history of Dr. Reamy's case, however, it does not appear that septicemia was developed until a few hours after the miscarriage; and hence in that instance the blood was not infected by the dead child, but probably, as in most of these cases, by the post-partum absorption of decomposing animal matter through some lesion of the uterine or vaginal surface.

The treatment pursued was such as, I believe, is usually adopted. But in addition to the large doses of quinine at long intervals, and the occasional washing out of the uterus with antiseptic injections, I also employ of late, in the majority of these cases, veratrum viride. I do so because nearly all cases of puerperal septicemia are associated with inflammation. When septicemia exists in its typical form, veratrum would not be appropriate. But this affection almost always exists in union with one or more of the puerperal phlegmasiæ.

There may be some difficulty in unmasking the inflammation, and pressure upon the uterus, veins, or other inflamed structure may elicit no sign of pain. Sensation is so blunted by the circulation of toxic blood through the nervous centres that it is in many cases very difficult, and sometimes impossible, to detect this, the most prominent sign of inflammation. Autopsies of cases of puerperal septicemia almost always reveal congestions or inflammations, and it is to these relatively numerous cases that I would direct its use. Its sedative action upon the heart, thereby diminishing and limiting the arterial movement, allows the inflamed tissues comparative rest and favors cure. Whatever tends to decrease the volume of blood circulating in an inflamed organ tends also to make that organ comparatively immobile, and allow the conservative forces of the system to act within normal limits.

In 1876 I published an article on puerperal septicemia, running through three numbers of the *Cincinnati Medical News*. At that time I was not aware of the value of veratrum viride in its treatment, but believed, with Fordyce Barker, 'That this is not a disease to be treated by an arterial sedative, such as the veratrum viride.' And yet this author from whom I quote says that, 'In actual obstetric practice, we meet with few cases of pure, uncomplicated septicemia, for it is usually associated with other affections, as puerperal fever, or phlebitis, metritis, peritonitis, or other of the puerperal phlegmasiæ.' With seeming inconsistency

he recommended veratrum in puerperal phlebitis, peritonitis, metritis, etc., but not in septicemia, although he says the latter is rarely pure, but almost always complicated by one or more of the former.

Probably the chief reason why very few obstetricians employ veratrum in this form of puerperal fever is because they do not recognize clearly the class of cases to which it is applicable. Certainly nothing could be more harmful than to employ the remedy in an asthenic case unattended with inflammation. But to those who know how and when to use it, it is a remedy invaluable."

DR. REAMY said, in reply to Dr. Underhill: "I regard all forms of puerperal fever as septic. I do not believe that the septic agent need be or is specific or uniform in character. I do not, of course, here include metritis, peritonitis, cellulitis acuta, and so on, depending upon traumata, or sudden cold. These may be attended by sthenic fever, and no agent could be of greater value in treatment than veratrum viride. But septicemia is from the start and continues to be a state of depression; and soon we have fatal cardiac exhaustion. I do not, therefore, think in such cases veratrum a judicious remedy; under such circumstances the temperature and pulse can be more effectually controlled by stimulants than sedatives."

THE PRESIDENT reported

A CASE OF PROBABLE CEREBRAL EMBOLISM OCCURRING IN THE
PUERPERAL STATE.

"For most of the notes of this case—a case which came under my care during my term of service in 1876 at the Cincinnati Hospital—I am indebted to Dr. W. A. Rothacker, formerly house-physician in that institution.

August 14th, 1876, Laura K., æt. 19, single, a native of Kentucky, and a domestic by occupation, was admitted to the medical ward. Father had been accidentally killed; mother alive, but in delicate health. The patient denied having ever suffered from syphilis. Three months prior to her admission, when advanced to the third month of pregnancy, she received a fall, injuring her right hip, and causing such pain in the pelvic region as to confine her to bed for two or three weeks. Eight days before entering the hospital (August 6th), she miscarried at about the sixth month. Two days later, on attempting to take some nourishment, she discovered that her left hand and arm were powerless, and also that the left leg was in the same condition. For several weeks before miscarriage she had been troubled with a violent headache which, without being asked to describe, she added, had been limited almost exclusively to the right temporal region. After the miscarriage the headache ceased entirely, and

on the day when she found her side paralyzed she felt so well that she had left her bed for an hour.

At date of entering the hospital she was poorly nourished, sordes on the teeth, anorexia, bowels constipated, pain in the right hip and knee, the latter being due probably to her fall above described. Paralysis of motion, with much impairment of sensation, both affecting the left half of the body, including the face. Left pupil larger than the right, face drawn to the right, tongue when protruded deflects to the left, and partial ptosis of the left upper eyelid. On attempting to masticate food it would collect between the left cheek and teeth; cough slight, and lochial discharge very offensive.

The results of physical examination were negative. Urine alkaline and non-albuminous.

Pulse 100, temperature 101.5°.

Before proceeding further I will state that, having learned of the patient being attended by the late Dr. Colter, I addressed that gentleman a note, asking him to put me in possession of any information which might be of service to me. He courteously favored me with a reply, from which the following extracts are taken :

CINCINNATI, Sept. 25th, 1876.

. . . 'In regard to the parentage of Laura K. I will say that I have known her mother three years. She (the mother) is reported to have been for the last twenty-five years a sporting woman, belonging to the lowest of that class. Both she and her husband (Laura's stepfather) have tertiary syphilis. As to Laura, it is not certain she has ever been affected with syphilis, but the father of her illegitimate babe alleges that he contracted from her syphilitic disease. On the morning of the 6th of August I delivered her of a male fetus, apparently at the sixth month of gestation. Her labor was not unusually painful. When called, I found the os well dilated, the membranes protruding, and in about an hour the child was expelled in the unruptured sac. Unusual difficulty was experienced in removing the placenta, which I was finally compelled to detach from the uterine surface in small pieces. It was easily torn, and appeared to be diseased. Hemorrhage was not great, but she complained of more pain afterward than is usually experienced by the primipara.

The child was dead, and from the ease with which the skin could be peeled off, from the condition of the cord, and from other evidences I conclude that it was dead a week, perhaps a fortnight prior to its expulsion.

I think it was the second day after her delivery that she became suddenly paralyzed in the left half of the body, losing also at the same time for a brief period the power of speech and the ability to swallow. As soon as she had rallied sufficiently to be removed I ordered her transfer to the hospital.

Very respectfully,
T. A. COLTER.

It is to be regretted that the doctor did not furnish data relating to her temperature, disturbance of intellectual functions, and more careful notes concerning the interruption of speech during the few days she was under his care after the onset of hemiplegia.

But returning to the history of the case while in hospital, I find that on the day after admission she was more cheerful, and ordered :

R Potassii iodidi..... ʒ iv.
Ammonia carbonat..... ʒ i.
Syr. sars. compos..... ʒ vi.
M. S.: ʒ iij. every four hours.

Wine was to be administered alternately with the above, and vagina to be washed out twice daily with a weak solution of carbolic acid. Pulse 120, temperature 99°.

August 18th.—Sensation had improved on the affected side. The vaginal discharge still continued offensive.

August 19–24th.—Between those dates pulse ranged from 100 to 120°, and temperature but slightly above the normal.

August 25th.—Moderate diarrhea, and but little control over the functions of the bladder.

August 26th.—9 A.M.: pulse 102°, temperature 98.5°; 7 P.M.: temperature 104°; 8 P.M.: pulse 108°, temperature 98.8°. Patient complained of unusual pain in the head, and along the left side from the knee to the shoulder, but no special cause could be discovered for the great and unusual variations of temperature. There was considerable edema in the left foot and leg. Pulsation could be felt as usual in the tibial arteries.

August 27th.—No cephalalgia, and very little pain in the side; and she expressed herself as feeling able to get up. Still no motor power on the left side.

September 5th.—At 4 A.M. of that day had a slight chill, followed by a rise in temperature to 100.5°; and on September 6th, in the afternoon, the pulse rose to 130°, and temperature to 103°. The fever subsided on access of a slight diarrhea.

September 16th.—Surface temperature of the left leg taken

to-day for the first time, and found to be 2.5° lower than that of the right. Frequently subsequent to this date the surface thermometer was used, and whenever a difference was noted it was always found that the left leg had suffered a loss of heat.

September 24th.—During the last week temperature almost normal, and pulse-range from 84 to 120° .

September 29th.—Ophthalmoscopic examination by Prof. Joseph Aub showed double optic neuritis. Ordered interrupted current to be applied once every day.

October 8th.—It was found that she could move the left leg tolerably well, and that with some support she could walk a few steps. During the next eight days, under the continued use of the battery, there was still further improvement in the use of the leg. By the 17th she could move the left upper arm slightly, and also the fingers.

December 1st.—Walked about the ward quite readily, and had tolerably fair motion of arm and fingers, though none whatever of the forearm.

December 4th.—After a stay of nearly four months in hospital she was discharged very greatly improved.

While she was an inmate, treatment was at first mostly of a stimulant character, brandy and carbonate of ammonia chiefly. Later, the iodide of potassium was combined with ammonia, and wine substituted for brandy; the iodide, however, being administered more persistently than any other single therapeutic agent. Tonics followed stimulants, the general plan of treatment being occasionally interrupted by the use of other remedies rendered necessary by intercurrent affections, of which bronchitis and diarrhea were most troublesome. Electricity, which was employed toward the last, appeared to be productive of benefit.

Since beginning to rewrite these notes, I determined to seek out this patient and discover, if possible, her present condition. I found her a few days ago, and now, at the end of two and one-half years from the date of her discharge, she has regained but little use of her paralyzed leg, and there is no increase whatever in the muscular power of her arm. But, on the contrary, there is great improvement in the paralysis of sensation, and the sense of touch is almost as acute on the affected as on the healthy side. She walks with a limping gait, but is able withal to attend to most of her household avocations. She has gained very much in flesh, has had no symptoms of any recurrence of the attack which first prostrated her, and in fact has had no other illness since discharge from hospital. The mental faculties appear to be unimpaired, memory especially good, apparent recovery from optic

neuritis, and speech is unaffected. Her habits of life have been perfectly regular in every respect and, except that she is compelled to live poorly, she has been under excellent sanitary influences."

DR. PALMER said he was sorry not to agree with the author of the paper in his diagnosis. He thought that the social condition of the patient, the possible evidence of the existence of a specific constitutional taint, the cephalalgia for some days on that side of the head which proved to be the seat of the hemiplegia, would explain the case in another way than from cerebral embolism. The suddenness of the attack excluded, probably, a syphilitic tumor, while the head symptoms of some duration indicated mischief going on within the head, culminating in an extravasation. There was no history of rheumatism or cardiac valvular disease, in which some excrescence from that organ could be detached to be lodged within the brain.

In support, however, of the author's theory, it is to be remembered that the patient had the peculiar blood state (hyperinosis) of pregnancy, which favors thrombosis and embolism.

To the speaker, the case appeared to be one of ordinary cerebral apoplexy occurring in a pregnant woman, possibly precipitated by that condition, and her constitutional disease.

DR. QUINN expressed the opinion that the case reported was one of apoplexy, giving rise to hemiplegia. He could discover nothing in the history as given to convince him that there was cerebral embolism.

DR. WALTON inclined to the view that the symptoms and course of the affection pointed to an extravasation of blood within the cerebrum.

DR. THAD. A. REAMY said: "I cannot agree with my friend, the President, as to diagnosis. I confess fully that the same causes which render a non-syphilitic woman obnoxious to the dangers of a parturient embolus may act with equal force upon a syphilitic woman. But since it appears to my mind tolerably clear that this patient was syphilitic, etc., I think far more likely that her attack was the result of syphilitic disease of the brain, its arteries, or membranes. She in all probability suffered of gummata, not necessarily well-formed tumors, but deposits around arteries.

Now my learned friend does not believe this patient to have been syphilitic. Let us examine the evidence as presented in his clear and succinct report.

Social History.—Her mother, according to Dr. Colter, had been a public woman for twenty-five years. Both she and her husband, step-father of the patient, were treated for tertiary syphilis. The patient herself was pregnant without marriage, she could not therefore have been a woman of virtue. The father of her illegitimate child was treated for syphilis, which he claimed to have contracted from her. Now it is not very material whether his story be true or false. If he had it, and was in the habit of cohabiting with her, she was exposed.

Now as to the *clinical* facts. She gave birth to this child prematurely, as syphilitics usually do when pregnant. And the appearance of the child when delivered, as shown by Dr. Colter's note, agrees perfectly with that presented by syphilitic children at birth.

Now, if we consider all these facts, and then add that this patient had hemicrania of a violent character for several weeks prior to the final blow; the negative fact that she had never suffered of acute rheumatism, thus laying the foundation for cardiac vegetations; then the fact that her labor, being premature, was neither specially painful, nor violent, nor protracted, favoring embolus, I think we may fairly attribute the lesion of the corpus striatum, which caused paralysis of the arm, leg, and part of the tongue and face as having been the result of hemorrhage, thrombus, or other obstruction, if the result of syphiloma or other syphilitic changes, damaging cerebral vessels or at least impeding the circulation, and hence the result.

Finally, I hope it will not be considered by my friend as begging the question, when I claim that the marked and rapid improvement following his administration of iodide of potassium renders still more probable the correctness of this view of the case. He thus postponed the post-mortem, which alone can settle the question of diagnosis."

THE PRESIDENT, in closing the discussion, said:

"A positive diagnosis of cases similar to the one reported can rarely be made during life. We will never know definitively the character of the lesion in this instance, unless revealed by future autopsy. And yet, while admitting all this, my first impression that it was a case of cerebral embolism has been strengthened by a careful study of the phenomena attending it during the long time it was under observation.

First, I shall endeavor to locate in a general way the lesion. The paralysis being purely hemiplegic and affecting the left side, indicates that it had its source in the right side of the cerebrum. Had it originated in changes affecting the right crus cerebri, there would have followed also paralysis of the oculo-motor of the paralyzed side. Had there been lesions existing in lateral portions of the pons, there would most likely also have resulted anesthesia or facial paralysis of that side of the face corresponding to these lesions. And had they existed in the cerebellum, hemiplegia would not have been pure, but would have extended also to the other side. Whenever hemiplegia exists, it indicates most frequently that the lesion is in one side of the cerebrum, less frequently in one side of the pons, in one crus cerebri, or in one side of the cerebellum (Niemeyer). If we use these facts to assist us in the interpretation of the clinical phenomena exhibited by the case, we are pretty safe in deciding that the lesion, whatever it may be, exists in the right side of the cerebrum. I will, when concluding my remarks, indicate its more exact situation.

Second, Is it a case of thrombosis of one of the cerebral vessels?

Before answering this question, it may be well to glance at the

etiology of this affection. The prime factor in the causation of thrombosis is now well known to be structural change in the walls of the vessel, coagulation of blood at the site of the diseased structure, and consequent arrest of circulation in the vessel beyond the site of the obstruction. The structural change consists usually of acute or chronic inflammation of a circumscribed character affecting the walls of the vessel. According to Lidell, acute arteritis is generally the cause when a thrombosis is found in the comparatively young or middle-aged subject, while chronic endarteritis—or what is often called atheromatous or fatty degeneration—is almost always discovered when the affection attacks the aged. All authorities agree in the statement that thrombosis is essentially a disease of advanced age, less frequently attacking those of middle life, and very rarely the young. The age of our patient (19) excludes the probability, indeed almost the possibility, of thrombosis. Nothnagel mentions no case under thirty, and I have been unable to find the report of a single instance where occlusion of a cerebral artery from this cause occurred before the age of twenty-nine. Besides, there could be traced no cause of acute arteritis, there having been no unusual exposure to heat, no injury, no abuse of alcohol, nor rheumatism. Careful examination failed to reveal any derangement of the heart, either in structure or function. There was no such enfeeblement of its action as could give rise to a thrombus by a slowing of the blood-current through the cerebral arteries. In fact, it may be stated as a rule applicable to all cases, that the blood circulates through the circle of Willis with such rapidity as to effectually prevent the formation of a clot by the deposition of new material in the arteries of which it is composed.

Third. It has been suggested that the phenomena may be accounted for by the presence of a gummy tumor.

It may be premised, in considering the possibility of gummata, that syphilis was not proven to exist. No signs of specific disease manifested themselves during the four months she was in hospital: nor have they been observed during the two and one-half years that have since elapsed. Iodide of potassium was given principally on the supposition of a *possible* syphilitic taint—a supposition which the subsequent history of the case shows to have been almost certainly erroneous.

Nor do I think that the phenomena, antecedent or subsequent to the attack, are such as to mark a gummy tumor of the brain. Epileptiform convulsions almost always occur when the tumor is in the cerebrum. In this case there were none, nor was there exhibited that general mental ruin so commonly witnessed in cases of cerebral tumors. Had the attack been caused by pressure of gummata, the paralysis would have come on more slowly, and would probably have been associated with formication, muscular twitching, and hyperesthesia. Besides, there was no headache at the time of the attack, no meningitis nor vomiting. True there had been severe cephalalgia, more particularly in the right temporal region, lasting a fortnight or so prior to miscarriage, but this I thought, and still believe, was neuralgia.

Fourth, It has been strongly urged that cerebral hemorrhage better explains the attendant phenomena than embolism. Certainly, to distinguish an apoplexy caused by hemorrhage from cerebral embolism is more difficult than to distinguish the latter from either gummata of the brain or thrombosis, and yet I think the symptoms were sufficiently characteristic in this case to exclude cerebral hemorrhage with a tolerable degree of certainty.

Upon examining the etiology of apoplexy, we find that it is due partly to structural disease of the arterial walls, partly to an anomalous condition of that portion of the brain immediately surrounding the vessels, and partly to an increased lateral blood-pressure against the wall of the vessel. The bleeding occurs most frequently from a combination of two or more of these factors.

While discussing the possibility of thrombosis, I showed the improbability of structural disease of the walls of the vessels, and while speaking of gummy tumor of the brain, I showed the improbability of any antecedent anomalous condition of cerebral structure. There then remains the third factor to be considered, viz., increased pressure of the blood in the vessel. It will hardly be claimed that this element would have been likely to cause rupture of a vessel unless one of the other two had existed. When the amount of blood lost at delivery is taken into consideration, also the subsequent sanguineous discharge from the uterus, it must appear evident that the blood pressure against the arterial walls was thereby greatly lessened, and that rupture of a vessel from this cause would have been far more likely to occur prior to than after parturition.

In apoplexy of cerebral hemorrhage there is loss of consciousness, usually complete, or at least great mental hebetude. In my case there was neither.

Often hemorrhage into the substance of the brain is marked by convulsions: here there were none. Although hemorrhage into the brain may occur at any age, yet it very rarely happens in persons so young as my patient; persons under forty are much more obnoxious to embolism.

When the apoplectic seizure is developed suddenly, the patient drops to the earth as if 'knocked down'; there is stertorous breathing, and a train of symptoms with which we are all familiar. If cerebral hemorrhage occurs slowly, there is general paralysis, the functions of both sides of the cerebrum are lost, and if the effusion be above the tentorium, there is contraction of the pupil. The symptoms described in my case differ, as may be seen, very essentially from those belonging to apoplexy occurring either suddenly or slowly.

Again, there was no faintness nor sinking, which so usually usher in attacks of cerebral hemorrhage. And finally, if the case was one of extravasation of blood into the brain, convalescence, if occurring at all, would probably not have been so extremely tedious. The very slow recovery indicates the collateral edema and softening associated with embolism. Fortunately I have never had but one case of cerebral apoplexy occurring in the par-

turient state, and in that the symptoms were as different from those belonging to the case described as night is different from day.

But if there was cerebral embolism, it may be asked, whence came the embolus? The heart, which we all know to be most frequently the source of cerebral emboli, was shown by physical exploration to be free from valvular or other disease. Besides, the lesion was in the right side of the brain, whereas the left is more likely to be affected by embolism, on account of the blood-supply to that side being furnished more directly from the heart by the left carotid, than to the right side by the innominate artery which forms much of an angle.

It must not be forgotten that there was for a long time considerable edema of the left foot and leg, which with concurrent evidence proved that there was also occlusion of the femoral vessels of the left lower extremity. This circumstance shows that the blood was in a state of hyperinosis, and had a special tendency to coagulate. The whole circulating fluid contained an excess of fibrine and serum, and a deficiency of red corpuscles as compared with the healthy state, and was therefore liable to cause either embolism or thrombosis. Not only in pregnancy does hyperinosis of the blood exist, but it is also discovered in pneumonia, pleurisy, pulmonary gangrene, and consumption, and it is confirmatory of my diagnosis that cerebral embolism occurs almost exclusively in diseases characterized by an excess of fibrine in the blood. My object in exhibiting carbonate of ammonia so freely and persistently was mainly for the purpose of obviating, as far as possible, this predisposition to the formation of blood-clots.

Further strength is lent to the diagnosis of cerebral embolism by the ophthalmoscopic examination of Prof. Jos. Aub, who found the retinal vessels very much enlarged, and diagnosed optic neuritis. Upon this point, Hammond says, in his 'Treatise of Diseases of the Nervous System:' 'In examining a case of recent embolism, the ophthalmoscope should always be used to view the fundus of the eye, and even in old cases valuable signs will often be obtained. The middle cerebral artery, the ordinary seat of embolus, arises from the internal carotid, after the anterior cerebral and ophthalmic have been given off. Occlusion of its channel must, of course, throw an increased amount of blood into the last-named arteries, and, as the arteria centralis retinae is derived from the ophthalmic, it and its branches become enlarged. The ophthalmoscope will enable us to discover the congestion thus produced.'

It is known that optic neuritis sometimes recovers, and fortunately this was the result in the case under consideration. Since the heart-valves were unaffected, it is impossible to determine with certainty the point at which the clot was formed. Did the coagulum form in the general circulation as a result of hyperinosis and independent of any local lesion of the inner coat of any of the vessels? Or, did it originate in some one of the uterine sinuses or vessels? It will be remembered that unusual difficulty

was experienced in the removal of the placenta, that it was finally detached in small pieces by force, and that it appeared to be diseased. As the cavities formed by the uterine veins in the uterine parietes are very large in the puerperal state, it is not improbable that some of these sinuses were injured in the process of forcible removal of the after-birth. Death has been known to ensue in consequence of clots derived from this locality. In this connection I recall a case in which a woman, who had long been affected with metrorrhagia, was in the habit of using a vaginal injection of alum-water for the purpose of moderating the hemorrhage. On one occasion, while using the Davidson syringe for this object, she fell over and suddenly expired. A careful autopsy was made by Prof. Palmer, and death was found to be caused by a heart-clot. The conclusion was irresistible, that enough of the alum-water had entered the circulation through the fragile, diseased walls of the uterine vessels to cause the formation of the fatal clot.

Where did the embolus lodge? Usually cerebral emboli lodge above the circle of Willis, and in that branch constituting the main prolongation of the carotid, the *arteria fossæ Sylvii*. In the right Sylvian artery I locate the occlusion in the case we are discussing. Had the obstruction been on the cardiac side of the circle of Willis, the collateral circulation through the remaining vessels of the circle would have been sufficient to prevent anatomical changes in the brain-substance. From the profound disturbance wrought, I conclude that the right Sylvian artery, and not merely one of its terminal branches, was the vessel occluded. Supplying as it does so large a district, consisting of a portion of the corpus striatum, the second and third frontal convolutions, the island of Reil, and other most important structures, serious and extensive pathological changes necessarily result from its occlusion. Locating the embolus in this artery, we therefore lack the aphasic symptoms which would have almost certainly been prominent had the lesion been situated in the left Sylvian artery or some of its branches."

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF BOSTON.

The Gynecological Society of Boston held its regular meetings, after the suspension of publication of its journal, throughout a portion of the year 1873. Thereafter, the death of its President, Dr. Winslow Lewis, and the continued illness and residence abroad of its Secretary, Dr. Horatio R. Storer, led to a discontinuance of its sessions and work. Upon a call issued, however, for the 1st Jan., 1878, many of its members met at the house of Dr. Bixby in Boston, on the occasion of the tenth annual, and eighty-sixth regular, session. The meeting was organized with the election of H. R. Storer, M.D., to the chair, and of G. H. Bixby, M.D., as Secretary. At a subsequent meeting, Dr. Bixby resigned both his active membership and his office, and Dr. H. M. Field was elected Secretary. Since 1878, the Society has held its regular monthly meetings, with the same general organization as was then declared.

Stated Meeting, Jan. 2d, 1879.

The President, DR. H. R. STORER, in the Chair.

PRES. STORER read his

ANNUAL ADDRESS.

He reminded the Society that it had completed the first decade of its existence and recalled the unpopularity of its work and purposes at the time of its origin. He congratulated the members upon the success which had attended their efforts, and with which they had carried out the grand object of the Society's organization, viz., the recognition of gynecology as an art and science separate from obstetrics, and as a worthy, and at times essential, department of the service of the general practitioner. He recalled, in terms at once eloquent and filial, the memory and the worth of the first President, Dr. Winslow Lewis. He then proceeded to illustrate in various ways the work the Society had accomplished during the first ten years of its existence. "Ten years ago, the New England practitioners, who avowed themselves interested in

the diseases of women, might almost be counted on the hand." At that time, ovariectomy was, as it were, under the ban of the profession. In Boston, in 1869, gynecology was repudiated in name and in practice by the profession, with but few exceptions; while of the small number who had the candor to admit the honesty of such as were devoted to this department of practice, but very few had the moral courage to treat their own pelvic cases. The great change which has come over the community and the profession, in sentiments held on these subjects, was then portrayed, and the direct influence of the Society traced in these important transformations.

Another office performed by the Society has been the establishment of a gynecological library; the first successful effort of the kind in this country. A review of the inception and growth of this enterprise was given in detail in respect of the more prominent facts of its history.

The interest which this organization has excited throughout the world is well shown by the roll of its members; and to-day there are but few in any land who have rendered valuable and prominent service in the cultivation of gynecic science and art who are not inscribed on its list. While the constitution limits active membership, and but few can at any one time serve as its working members, the roll of its corresponding and honorary membership already reaches many hundreds. All of such, by their publications or other distinctive gynecological work, have shown themselves worthy of the recognition of the Society.

The President closed in language calculated to remind the Society of its duties and privileges, and exhorting it to leave behind those asperities which are inseparably associated with the inception of a new and grand undertaking, urged that its members should enter with courage and confidence upon the more prosperous work of the assured present and future.

DR. FIELD presented for discussion a

CASE OF CIRCUMSCRIBED ENDOMETRITIS.

A married lady, 42 years of age, regular in menstruation, had never been pregnant. Womb in right position and of nearly normal size; the neck, however, had fallen backwards towards the cul-de-sac. An attempt to introduce the sound found the uterine orifice extremely small and contracted. When the sound had penetrated to the region of the internal os, the patient complained of extreme pain and sensitiveness, which appeared to be confined to a region starting from the point indicated and including a tract about one-third inch farther upward. There was no abnormal discharge from

uterus or vagina. The general health of the patient had long suffered, to the extent of reducing her to a recognized invalid. No other organ than the uterus appeared to be responsible for such declension of health. About a year before, patient had consulted a distinguished gynecologist of New York City, who had failed to find any uterine condition requiring treatment, and who had refused all measures of relief, aside from introduction of a small elastic ring, with intent to keep the cervix in place. The patient, however, had never experienced any relief or been satisfied with this decision and view of her case. Dr. Field regarded the case one of intrauterine inflammation, of strictly defined limits and unusual phase, and had reported it for the opinion and counsel of the Society.

DR. WARNER remarked, that if the region of sensitiveness did not depend upon flexion of the neck, which Dr. Field was assured it could not, he should suspect the presence of some small submucous fibroid growth at the point of tenderness. Would advise dilatation of the canal of cervix by sponge-tent, with view to diagnosis.

DR. PINKHAM had found the slippery-elm tent valuable for a similar purpose.

DR. BROWN would employ internal scarification.

DR. GARRATT referred to an instrument he had devised for this latter purpose years before. Dr. Miller, of Dorchester, proposed his instrument, now so familiar to the profession. He had got valuable results from it, in cases of hyperesthesia and painful points, where other measures had failed.

DR. FIELD, in connection with the report of his case, showed his shielded applicator, which was designed to enable the physician, in suitable cases, to treat uterine disease without recourse to the speculum. Should hardly know how to treat uterine disease without it. It is made and furnished by Codman & Shurtleff.



The applicator is sound-shaped and has, at its distal extremity, a curved shield of arc made to correspond with the curve of Simpson's sound; at its proximal extremity is a button attached to the applicator and allowed to slide along a groove in the handle. As the button slides forward, the applicator protrudes beyond the shield.

Having been protruded, armed with absorbent cotton, and dipped, *e. g.*, in tincture of iodine, the instrument is ready for use.

A preliminary resort to the sound determines the direction of the axis of the uterus and opens its cavity. The shielded applicator follows, being used in the same way as the sound. The length of shield, etc., allows of its being protruded within the uterus to

the extent of two and a half inches; and the extent to which the applicator should penetrate, whether only to the internal os or up to the fundus, is determined by the operator in the use of the button in the slide of the handle.

Its uses are obvious. It dispenses with the use of the speculum altogether, in those cases where the disease is strictly confined to the cavity of the cervix or uterus, or both.

This is especially desirable in the case of unmarried females.

By means of this simple instrument, I have been enabled to treat and cure the worst forms of endometritis, parametritis, and retro- or ante-flexion of the womb, without once, in the course of months or years, having introduced the speculum or inspected the interior of the vagina, or the outer surface of the os.

Stated Meeting, Feb. 6th, 1879.

The President, DR. H. R. STORER, in the Chair.

On favorable report of the Committee, the following gentlemen were balloted for and declared duly elected to corresponding membership: H. T. Hanks, M.D., and J. E. Janvrin, M.D., of New York, and S. C. Gordon, M.D., of Portland, Me.

DR. W. S. BROWN then read a paper on

OVARIOTOMY IN GREAT BRITAIN AND THE UNITED STATES.

“Ovariectomy originated in Kentucky. That is a fact which it is needless for foreigners to deny; although the glory of first carrying out this operation is so great that the temptation of claiming it for one’s own country proves too pressing to be resisted by many partisan writers. The latest work on gynecology—Leblond’s, of Paris—ignores Dr. McDowell’s just claim, and tries to award the prize to Laumônier, of Rouen, whose vaunted operation consisted in little more than opening an abscess, the removal of the slightly enlarged ovary on suspicion of scirrhus being quite superfluous. Dr. Houston’s case at Glasgow, in 1701, comes much nearer the mark, although it was not an ovariectomy. He simply evacuated the contents of a dermoid cyst, and made no attempt to remove the cyst itself. I am glad that the greatest living ovariectomist—Spencer Wells—gives credit to whom credit is due, and, at the close of his recent course of lectures before the Royal College of Surgeons, ascribes to Dr. Ephraim McDowell the merit of priority.

But while it is true that the operation originated in the United States, it cannot be denied that it has made much more rapid progress in Great Britain than in any other country. In a conversation with Dr. Gilman Kimball, last November, he advanced the

idea that the greater success of ovariatomists in Britain was due to the difference in climate. That may have something to do with it; and the less excitable constitutions of our British sisters may also account for part of the difference. But I think that more—a great deal more—depends on the operator and his methods, with the intelligent co-operation of highly trained nurses. I saw this strikingly exemplified a few years ago in New York City, when I had the privilege of spending a week at the New York State Woman's Hospital, and saw Dr. Emmet operate. His extraordinary skill, and the unusual ability of the nurses, accounted for his success in cases of vesico-vaginal fistula. It seems to me that the large percentage of recoveries which attend the practice of Dr. Thomas Keith and Mr. Spencer Wells are to be accounted for in a similar way, without much help from peculiarities of climate.

If the Society will bear with me for a few minutes, I will try to transmit some of the impressions—gossipy and otherwise—produced during a visit last summer to these two remarkable surgeons.

I called on Dr. Keith at his house, North Charlotte street, Edinburgh, July 19th, 1878. He looked like a man suffering from disease; and I afterwards learned from a physician of his acquaintance that he has been a great sufferer personally, having undergone three surgical operations for vesical calculus. He brought me in mind of Von Graefe, the great German oculist. Both men bear a striking resemblance to the celebrated picture of Christ by De la Roche.

He received me kindly, read my letter of introduction from Dr. Chadwick, and walked with me to his private hospital, not far from his own house. A patient from whom he had removed an ovarian tumor, two weeks previously, was still in the hospital, and I had the satisfaction of seeing him change the dressings with his own hand. He also showed me his collection of instruments, which, after being cleaned, are touched by nobody save himself. He now uses the antiseptic spray in every case, both for the operation and while removing the stitches, but not afterwards, unless deemed necessary. He employs sulphuric ether exclusively as an anesthetic, believing that it is safer than chloroform, and less likely to nauseate.

[Parenthetically I may be allowed to direct the attention of members to the 'Preliminary Report on the Action of Anesthetics,' published in the *British Medical Journal* for Jan. 4th, 1879, in which the Committee say that 'chloroform administered to dogs and rabbits has a disastrous effect on the respiratory centres. . . . It was apparent that the heart was to some extent simultane-

ously affected; and there were cases in which the heart appeared to fail as soon as, if not before, the breathing. . . . A similar experiment with ether showed a very different result.']

Dr. Keith pays extra attention to cleanliness during the operation and recovery; he also believes in drainage; and attributes his success mainly to these items. But, as I have remarked elsewhere, I believe that his personal magnetism—the entire confidence which the patient reposes in his thorough honesty—his wonderful skill and clear judgment, and the knowledge that his successes outstrip those of every other surgeon, have more to do with the favorable results than anything else, cleanliness and climate included. Up to the date of my visit, he had operated 273 times, without making a single error in diagnosis, a truly remarkable fact in itself, showing a power of discernment amounting to positive genius. In his last published series of sixty cases, performed antiseptically, he had only two deaths, and these unavoidable. For it should be borne in mind that Dr. Keith does not select his cases, but, on the contrary, often operates under the most desperate circumstances.

The next day (July 20th) I went to London, and had the good fortune to find Mr. Spencer Wells at his office, No. 3 Upper Grosvenor street. Mr. Wells is a stout, well-built Englishman, resembling John Bright so much in appearance that he is sometimes mistaken for him. He has a decisive Napoleonic look, which carries conviction and confidence along with it. He was just getting ready to visit a patient, and kindly asked me to go with him while he looked at the letter of introduction. After the visit he carried me to several of the public parks and monuments in his own carriage, expressed his regret that he had no case on hand, and invited me to lunch with him on the following Monday. You may be sure I was only too glad to accept the hospitable invitation, spending an hour or more listening to his instructive conversation. He presented me with copies of his monographs, lectures, etc., which I shall always highly prize as a memento of my visit.

Next day I went to Paris, remaining nearly a week, during which I visited the new Hôtel Dieu, and returned to London July 30th, on which day I was privileged to see Mr. Wells operate at a private residence. Bichloride of methylene was employed as an anesthetic. The patient was an unmarried lady, forty-two years of age. The tumor proved to be multilocular, without adhesions, and with a broad short pedicle, which did not allow the clamp to be used. The pedicle was transfixed with a blunt needle, and tied with carbolized silk thread cut short. The abdominal cavity

was thoroughly cleansed with new soft sponges, the other ovary examined, and the wound closed with silk sutures.

Mr. Wells was ably assisted by Mr. J. K. Thornton, of the Samaritan Free Hospital for Women. Dr. Day administered the anæsthetic; and these two, with the nurse, were the only assistants. The patient's family physician was also present. She was carried to bed in an adjoining room, and a pillow placed under her knees, so as to keep the parts as completely at rest as possible. The operation was performed at 2.30 p.m., the hour Mr. Wells prefers for all his serious operations.

Mr. Thornton has operated in the hospital nearly 100 times. It is to him that the profession are indebted for the ice-cap, 'whereby continuous cold can be applied to the head in cases of peritonitis.' The ice-cap consists of rubber tubing lined with linen, fitted to the head, through which a constant stream of ice-water circulates. An illustrative wood-cut may be seen in Heywood Smith's *Practical Gynecology*. Mr. Thornton has also devoted considerable attention to the microscopic appearances in ovarian and ascitic fluids. He has recently pointed out that, in addition to the cells of Drysdale, which are common only in simple or innocent ovarian tumors, in those which are malignant we find characteristic groups of large pear-shaped, round, or oval cells.

I visited the Samaritan Hospital under Mr. Thornton's guidance. It is simply a couple of private houses in Lower Seymour street, Portman square, transformed into a hospital. Mr. Thornton and Dr. Bantock are the attending surgeons. Mr. Wells is now consulting surgeon. A large number of his operations were performed here. I saw several interesting cases in the house, and examined one case of ovarian tumor which the surgeons decided was unsuitable for operation on account of pelvic adhesions.

So much for ovariectomy in Great Britain. What about the United States? No surgeon in this country has approached Mr. Wells in amount of experience. In July, 1878, he had operated 907 times. The number at present must be nearer 1,000. The late Dr. Washington L. Atlee operated in all 387 times, a larger number than has fallen to the lot of any other American surgeon. He commenced his career as an ovariectomist in 1844, so that his cases were spread over a period of thirty-four years. Mr. Wells commenced in 1858, and during the first three years had only ten cases.

Dr. Gilman Kimball, of Lowell, up to the end of 1878, had operated 236 times. He commenced in 1855, three years before Mr. Wells did. Dr. Walter Burnham, of Lowell, has operated over 200 times. The late Dr. Peaslee, I am told, operated some

fifty or sixty times; but I have been unable to procure the exact figures. His first operation was performed in 1850; and his first six cases were all successful. 'He also first made use of injections into the peritoneal cavity after ovariectomy in 1855.' He published his work on 'Ovarian Tumors' in 1872, the most complete of the three works on that subject.

Our worthy President, Dr. H. R. Storer, has also operated a great many times; but I have never seen a full account. Dr. Chadwick and Dr. John Homans have both operated successfully:

It will be perceived that Mr. Wells' experience is nearly three times as great as that of any American operator. And he is still in the prime of life, enjoying the high tide of professional success.

I take the liberty of drawing the following brief deductions from all I have seen and heard about ovariectomy on both sides of the water.

1st. Wait until the general health begins to fail before operating. This serves a twofold purpose. It helps to clear up doubts (if any exist) about the accuracy of the diagnosis; and the patient's chances for recovery are increased.

2d. In all *doubtful* cases, tap or make an exploratory incision before operating. If we find Mr. Thornton's pear-shaped cells it is not a suitable case.

3d. Employ ether as an anesthetic.

4th. Use carbolic-acid spray (1 to 20) during the operation and while removing stitches.

5th. Never operate without the assistance of a trained nurse, who should remain with the patient till recovery or death. Such a nurse would be preferably a woman; but she must be competent to use the catheter without exposing the patient, take the temperature, and give stimulants or opiates by hypodermic injection in case of emergency.

6th. Use a drainage tube in all cases requiring it.

7th. The ligature is preferable to the clamp in most cases. The *écraseur* and actual canterly are still on trial.

8th. Absolute cleanliness is the cardinal tenet—the Alpha and Omega—of ovariectomy. This includes a clean room without a carpet, clean air, clean operators, and a clean nurse.

Gentlemen, I firmly believe that if we follow out these deductions, our percentage of recoveries will increase; and the time may come when some American man of genius will successfully compete with Wells and Keith."

DR. MARCY gave an account of his visit to Spencer Wells. He allowed no talk in the operating room, kept the temperature at

75°, and, immediately after the operation, had the patient removed to another room with open fire.

DR. STORER said that, at the time he knew Mr. Wells, he required every one applying for admission to the operation to sign a statement to the effect that he had not, within a prescribed time, attended an autopsy or a case of erysipelas.

DR. NORRIS saw Mr. Keith ten years ago; at that time he chiefly used chloroform, but resorted to ether to stop vomiting.

DR. CUTTER, not being able to be present, reported by letter through the Secretary, his

FIFTY-SIXTH CASE OF ELECTROLYSIS OF UTERINE FIBROID.

Operation performed Nov. 22d, '78. From recent observation, he believes it will prove one of the best cases he ever had.

DERMOID CYST OF THE OVARY.

DR. MARCY called attention to an ovarian cyst containing teeth and hair. Subject, a colored woman about 45 years of age; some time before her death, the doctor had aspirated her for an abdominal swelling, and obtained about a quart of what appeared to be pure pus, but was declared by the microscope to be an emulsion of fat. Upon autopsy, found a shrunken cyst, occupying right portion of pelvic cavity and extensively adherent from pelvic cellulitis.

Stated Meeting, March 6th, 1879.

The President, H. R. STORER, M.D., in the Chair.

This being the 100th regular meeting of the Society, the President presented its necrology, giving the names of all who had died since its foundation: one active member, twenty-one honorary, and twenty-six corresponding members.

DR. R. P. LORING, read a paper on

THE THERAPEUTICS OF PUBERTY.

“Marked alterations in the girl’s physique occur at puberty. The mind, also, shares in this mysterious change. The bold, careless girl becomes modest, shy, and thoughtful. As a rule, salient mental characteristics and oddities are intensified; but sometimes the whole character is recast. New intellectual elements are added, and almost a new individuality emerges from this metamorphosis. These wonderful alterations take place in a few months. Nature has been working with intense celerity. All of the girl’s forces are being nicely adjusted to her important destiny. A complicated series of functions are being established which will dominate her

existence for many years. The brain and nervous system sympathize with this change, and are at times in a condition of exalted sensibility. The pelvic organs are commencing to be subject to a periodical plethora, and the nice reaction between ovulation and menstruation is being established. What a critical period in a woman's life! Nature is endeavoring to form a habit, and on its regular and natural occurrence depend the woman's health, happiness, and usefulness to her time and generation. But how seldom do we see the perfect accomplishment of this design! Why is it that within a few years every physician has become a gynecologist? Why have dyspepsia, hysteria, amenorrhea, dysmenorrhea, and leucorrhea become the rule rather than the exception? Why do our New England girls fade so soon after marriage (although many do not nurse their children)? Probably there are many answers to these questions. Nathan Allen says that the old New England stock is running out. Another replies that our modern civilization, with its artificially heated houses, its social habits, the inactivity which it imposes on our women, its high intellectual standard, and its high pressure system of education, have much to do with it. Possibly the truth is contained, in a degree, in all of the above statements. But, to be more specific, it seems probable that we do not appreciate sufficiently the importance of surrounding the initiative period of menstruation with a cordon of precaution and sanitary guards, to be continued until we have a perfect establishment of this function. I refer particularly to the beginning of puberty, the first few months, during which period the matter is left too much to Nature, while at the same time our educators are trying to force mental growth by the usual intellectual hot-bed process. We see girls, every day, whom Nature intended to be "Cornelias," suffering from hysteria, dyspepsia, and the whole catalogue of functional uterine disturbances; who, if they have children, become mothers of dyspeptics with unreliable nervous organizations. Our modern system of education ignores the peculiar nature of women, and frequently its victims are brought into our offices. Girls, once healthy, with strong bodies and red cheeks; now anemic, colorless, easily fatigued, with vitality and generative organs wholly unequal to the common necessities of their lives. Does the finely-arched brow, the capacious head, the cultivated manner and trained intellect compensate for the hysterical and disordered nervous system? Yet we are obliged to confess that this girl had once red cheeks, and that her present condition might have been obviated, had some one, the family physician perhaps, suggested the proper methods of education. But this was not done, and in a few years the girl is

married, gives birth to children of bright intellects, but with feeble bodies, fades under the exhaustion of child-bearing, runs the gauntlet of vaginal injections, pessaries, and uterine applications, and bears an existence made miserable by the knowledge that her cultivation is of little avail; that, as a woman, she has been a failure; that she has given birth to children whose highly organized brains will be curses rather than blessings to them. Now tell me, gentlemen, you whose experience is greater than mine, are these cases infrequent? Do we not every day meet this condition, in varying degrees, in women who had good physical possibilities before puberty? May not many of these functional disorders of nervous and uterine systems be avoided by carefully guiding girls through this period? Notwithstanding all of the resources of modern art, many of these cases remain unrelieved until the menopause. If prevention could be applied at the commencement of puberty, guarding jealously against any methods of education which should tend to develop the mind at the expense of the body; guarding against those social rules and impositions which conflict with sanitation; in short, favoring everything which tends to make this new function a fixed habit, perfect in its performance, then these sad cases would be less frequent. If the menstrual function is made a habit, is firmly established in the first place, then the future physical usefulness of woman is nearly insured. So, we believe that puberty is the critical period of a woman's life. At this time all her generative forces are in a nascent state. But, if it is admitted that there is room for prevention to work at this period of woman's life, how shall we apply it? In the first place, our school system must be modified so as to recognize the peculiar organization of girls. The curriculum of studies must be adapted to their necessities, so that during every month a few days of respite may be obtained. According to our present system, most girls enter the high-schools at about the time of commencing menstruation and are to remain there the following four years, that is, during the time of its establishment. The curricula of most of our high-schools are reasonably thorough, and their standards are high. The girl is impelled by ambition to work regularly and diligently. In addition to the five hours in school, it is necessary to apply herself two or three at home, in order to accomplish her school-work, and piano practice demands one or two more. This amount of application, encouraged by parents and teachers, is continued through the whole month, and no allowance is made for the periodical demands of nature for rest. As a result of this strain, continued during the monthly period, the girl uses in mental application a large part of the nerve-force which should

be directed to the genital organs, and she is exhausted by the effort of carrying on two processes at once. This, occurring month after month, finally changes the robust girl to the hysterical, anemic woman. Of course, this does not occur in every case, but it does in many, and it is of paramount importance to the girl's welfare that her education between the ages of fourteen and eighteen should be conducted on principles differing from those generally employed. A curriculum of such a character should be adopted that the girl can obtain, during menstruation, a few days of rest from intellectual endeavors, in order that her menstrual processes may have full play.

Between the menses, the studies should not be too confining or too severe, but should be gently graded, so that the ordinary high-school course of four years may be extended to five. Allowing one-fourth more time for its accomplishment, and the young woman can go over the same ground as her brother, with no disadvantage to herself. Co-education, under this plan, could not exist and, from our stand-point, it is not desirable that it should ; because the natural rivalry existing between the sexes at this age in school would lead the girls to over-apply themselves and so to defeat the very object we wish to conserve. But, besides this relaxation from mental application, the girl needs *physical* rest during menstruation. We would rank this second in importance. It is wonderful how nicely Nature adjusts herself to the different exigencies of human life, so that, if possible, not one ounce of force should be lost. As soon as we are sick, we instinctively assume the horizontal position. As a result, the law of gravitation ceases to act on the circulation, the heart immediately has its work lessened ; arterial tension is diminished : a large expenditure of cardiac power is thus saved, and with this a proportionate quantity of nerve energy is preserved and is turned in other directions, perhaps to engage in some needed reparative process. The muscles become relaxed and inactive. The amount of blood in them, as a result, is decreased. Tissue metamorphosis is retarded, and here again nerve-power is economized. As another result of reduced arterial tension, the amount of blood in the brain is decreased ; with it brain activity is lessened, sleep is induced, and here we make our great reduction in nerve expenditure. Nature is the great economist ! While we wonder at her bountiful donation of new osseous tissue to the fractured bone ; while we marvel at the wonderful supply of granulation given to the traumatic cavity, we are taught that she is not prodigal, but that the power she applies to reparation is the result of a rigid economy of her other forces. Now, we know that periodically the pelvic

organs of the young woman are in a condition of arterial engorgement. As a result, she becomes subject to a real hemorrhage, the quantity of which is sometimes enough to cause decided weakness, and the system generally sympathizes to such an extent that the girl is popularly said to be "unwell." Believing, as we do, that a great deal of functional uterine disturbance in after-life may be obviated by establishing a firm menstrual habit in the first place, we consider that physical rest ranks next to mental relaxation, as a means of favoring this end. Let us follow the suggestions of Nature and economize the nerve-power ordinarily expended in mental and physical activity during the monthly period, that our girls may have more energy to direct to menstruation. Let the family physician insist, not only on mental rest during this period, but also on a certain amount of recumbency during the first twenty-four or thirty-six hours of the hemorrhage. These two rules of mental and physical rest, of course, will preclude the possibility of those sudden suppressions of function which so often occur after wet feet, chills, or social excitement. And, finally, let me allude to those cases of delayed menstruation, or functional inactivity, seen sometimes in feeble or tubercular constitutions. As a rule, when these cases are brought to the gynecologist, it is so long since menstruation should have commenced that it is too late for the habit to be established. The family physician should be on the look-out for these subjects among his patients, and when the first indication of Nature's attempt is discerned, all of the above-mentioned precautions should be most carefully applied, and, at the same time, a judicious use of iron, cod-liver oil, and electricity may succeed in establishing a healthy function which, in three or four years later, would be appealed to, by the same means, unsuccessfully. Gynecology has been too restricted in its work, and has confined itself too exclusively to surgical operations and to the invention of ingenious surgical appliances, with results, however, which will place the names of Scanzoni, McDowell, Wells, Keith, Sims, and Thomas on the roll of the world's philanthropists. But it strikes us that one of the most important duties of this specialty, in New England at least, has been neglected; and to one who made no pretensions in this department do we award the credit of having first called attention, in his clear, logical, admirable manner, to the necessity of prevention. Dr. E. H. Clark, in his "*Sex in Education*," first brought the matter prominently before the public. We, of the medical profession, have not followed his leading. The sounds of his warnings are dying away in the distance, and the subject of "*Sex in Education*" is still ignored by

our relentless educators, who know little of, and who care less for the physiology of menstruation."

DR. STORER sympathized with the purpose and conclusions of the paper. When in active practice, he had many patients among female school-teachers and other women devoted to intellectual work. He doubted if women could do the same amount of brain-work as men, without suffering. The great need of New England women, in his opinion, is physical rather than mental or political elevation.

DR. WEEKS called attention to the fact that servant girls, who lead laborious lives, are not often sufferers from uterine difficulties.

DR. PINKHAM believed that the High School course would be less injurious to our girls if ventilation were better managed, and if the rooms were less crowded. The importance of ventilation is too little considered in our schools, and evils, due to such neglect, were frequently imputed to other causes.

The Secretary *pro tem.* read a communication from DR. FIELD, who was visiting the Woman's Hospital in New York, in which the statement was made that many gynecologists were using weaker applications to the uterus than they were accustomed to use a few years ago, and they claimed better results.

DR. WEEKS remarked he had seen salivation follow the intra-uterine application of strong acid nitrate of mercury; but he frequently used concentrated tincture of iodine with uniform safety.

DR. PERKINS believed that exceptionally severe results sometimes followed the careful use of gentle measures, in the topical treatment of the endometrium; and mentioned a case reported by Dr. Thomas, where death resulted from the use of a sponge-tent.

Stated Meeting, April 3d, 1879.

The Vice-President, L. F. WARNER, M.D., in the Chair.

H. O. MARCY, M.D., presented a

FETUS AND MEMBRANES FROM AN ABORTION

of the night before. Patient had had an attack of flowing four weeks previously, which, after two weeks' continuance, had stopped. Flowing a second time supervening, the uterus had evidently thrown off its contents by a voluntary effort; the doctor not having been called in until after this result. Ovum about three months advanced. Cord attached centrally, and it was evident, on inspection of the specimen, that a considerable mass of the membranes had for some time protruded from the os before the entire specimen was expelled. Membranes presented a form of

fatty degeneration, and beautifully showed, by certain lines and depressions, points corresponding to the utricular glands.

A. P. WEEKS, M.D., presented a

PEDUNCULATED UTERINE FIBROID,

that day removed, with the assistance of Dr. Warner. Patient had some time before submitted to an operation by another physician, who had succeeded in removing all but a small portion of the tumor, believing that the remaining part would be blighted and subsequently absorbed. This hope had been disappointed, and increased development had been since going on. Had first intended to employ the *écraseur*, but, on examination, he had discovered a capsule and, by careful manipulation, had succeeded in completely enucleating the tumor. Very slight hemorrhage. Specimen of irregular shape, about the size of an egg, its tissue firm and white and seemingly entirely free from blood-vessels; its nutrition being carried on by means of the pedicle and its investing capsule.

Soon after its removal, the tumor had been carried to Dr. Garratt, who succeeded in passing through it a current from a single-cell Daniell's battery, although the needles were inserted at the greatest possible distance from each other. The galvanometer showed the most positive evidence of electric influence passed throughout the structure of the tumor.

DR. MARCY reported a case from his practice where a tumor, too high up within the cavity of the uterus to be reached by the surgeon, was, after dilatation of the cervix, *slashed* with a knife and left to disappear by retrograde metamorphosis. He also gave ergot to assist this process. In two cases also of fibrocystic tumor, tapping had had a similar influence: and after eight to ten months, the growth had wholly disappeared.

DR. WEEKS had hoped for a similar influence and result in a case of uterine tumor, into which he had injected iodine through a veterinary hypodermic needle; but the case had disappointed him.

DR. FIELD reported a case in which he was called in consultation to determine, if possible, the condition in an abnormal state of things following parturition of four weeks before. Found the woman in bed, on her back, lower portion of the abdomen hard, tense, and dull on percussion. Patient was still flowing at intervals and, much of the time, losing blood freely. Did not pass the sound on account of the great sensitiveness of the region of the uterus. Her attending physician was confident the womb had wholly emptied itself of its usual contents, at the time of the birth.

Dr. Field reserved his decision, advised watching the patient, and prescribed liberal doses of ergot. A few weeks later was

shown, by the physician who had called him in, a large, irregular mass, about the size of a man's fist, which had been spontaneously extruded *per vaginam*, and which gave every evidence of being a fibroid, although in an advanced state of decay. Patient thereafter recovered her health and did well.

DR. MARCY asked information of members respecting

EXTRA-UTERINE TUMORS COMPLICATING PREGNANCY.

He reported one case in which such complication was discovered at five months, and, as the tumor was presented anteriorly, it could be followed throughout the subsequent course of pregnancy. Did not know the history of the case after parturition.

DR. FIELD called attention to the very various opinions held by different gynecologists respecting the safety and advisability of

APPLICATIONS OF NITRATE OF SILVER TO THE INTERIOR OF THE UTERUS.

Such treatment is largely distrusted in New York. The surgeons, for the most part, at the Woman's Hospital are afraid of this agent, either in solution or stick; and one medical gentleman, connected with this institution, stated that death had been known to follow the use of the agent, under his own observation. They were very sure of the fact of its peculiar danger, but seemed unprepared to give an adequate explanation. *Per contra*, Dr. Atthill, one of our corresponding members, in his last work, extols nitrate of silver as superior to every other material in intrauterine medication.

DR. WARNER was satisfied that the chief danger was to be apprehended from solutions of the salt. Unless the greatest care were taken, discharges from the uterine cavity, charged with nitrate of silver, would flow back into the vagina and cause bands and bridges of tissue, with result of permanent discomfort and injury. Had seen many such cases, a few years before, which had been treated by other physicians. Had himself in former years used nitrate of silver largely; but always preferred the solid form. Had always been careful to protect his patient against the mishaps which had been adverted to.

EPHRAIM CUTTER, M.D., read a paper on the

CLAIMS OF THE CUTTER STEM PESSARY.

He urged the necessity of careful selection of cases and of close watching of the patient in the early experience of this measure of local support. While all his cases had not been successful, he could report many others with whom the pessary had proved the

only effective means of assistance and for whom it was an inestimable boon, as it practically restored health, where all other measures of help had proved without avail.

DR. MARCY had used the supporter and had laid it aside. His theoretical objection to it is, that it holds the uterus in a fixed position, which is certainly a departure from the plan and habit of nature. The rubber band attached to it might allow of some play, but, if so, very little. In the adoption of various supporters, it had been too generally lost sight of that the vagina itself, under natural conditions, is—and is designed to be—the very best possible supporter for the womb. This passage is not a tube, but a sac closed on itself and designed to be kept closed. Instruments which act by distending it, and converting it into an open tube, are directly contraindicated, and must do great harm, both immediate and remote.

DR. WARNER testified to one point of great importance in Dr. Cutter's paper: the necessity of estimating distances and of accurately measuring each case in which a supporter is designed to be introduced.

DR. MARCY was convinced that the profession is gradually drifting towards the adoption of measures which impose less weight, and occasion less distention of the vagina, in adaptations to the displaced organ above.

DR. WARNER had seen a case of gaping vagina, from retroflexed womb, which would only close when the womb was restored to its normal position.

DR. MARCY, in certain cases, preferred Thomas' modification of the Cutter pessary, because it provides a pad or cushion which serves to fit into and fill an unnaturally large Douglas' fossa. He called attention to the position of the uterus as respects the vagina, as lately determined by some writers and as shown in the plates of the frozen sections; and which nearly represents the value of a right angle. Dr. Cutter's stem pessary requires an important modification, as it is now shaped, in order to fix the womb in a position relatively retroflexed.

DR. WEEKS finds that the Cutter pessary increases the menstrual flux, sometimes to an undue extent. One patient of his can wear it six weeks and then must have it removed, on account of commencing irritation.

A. L. NORRIS, M.D., presented a

UTERINE FIBROID,

with following history: Patient æt. 29 years; had had one miscarriage and had also been treated by the doctor for endometritis. Finally had become again pregnant and was delivered at full term of a large child, by help of forceps. On removal of the placenta, the uterus did not contract to its normal size. On examination, a mass was found attached to the fundus, which was thought at

first to be a supplementary placenta. Upon its resisting traction, an effort was made at enucleation with the result as displayed in the specimen shown. The tumor was a fibroid; the doctor feared injury to the uterus from the necessary violence done to the organ; but the patient recovered without an untoward symptom.

The doctor also showed his

INSTRUMENT FOR THE INTRODUCTION OF IODOFORM

or whatever other medicated powder into the cavity of the uterus. It consists of a tube, with a number of small orifices at the distal extremity, and with mouthpiece attachment. The powder, having been placed within the tube through a fenestra, midway between its extremities, is blown forcibly towards and through the place of exit.

DR. WEEKS showed an instrument designed to meet a similar purpose with medicated liquids. It resembles a uterine sound, but is perforated throughout; and at its distal extremity is provided with a number of small holes. At the proximal end is attached a piston syringe. The instrument, being armed with cotton, after the manner of an applicator, then placed *in situ* within the uterine cavity, the working of the syringe propels the contained liquid outwards towards the cotton, saturating it and thus bringing it into immediate contact with the surface against which it rests.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

(A B S T R A C T .)

FOURTH ANNUAL MEETING,

HELD IN BALTIMORE, SEPTEMBER 17TH, 18TH, AND 19TH, 1879.

Wednesday, Sept. 17th—First Day—Morning Session.

Pursuant to adjournment, the Society convened in the Johns Hopkins University, in the city of Baltimore, on the 17th of September, and was called to order at 9.30 A.M. by the President, DR. T. GAILLARD THOMAS, of New York.

The following Fellows responded to the roll-call:

Drs. Fordyce Barker, J. Marion Sims, T. Gaillard Thomas, Nathan Bozeman, Wm. T. Lusk, Henry J. Garrigues, Isaac E. Taylor, Paul F. Mundé, New York; Alex. J. C. Skene, John Byrne, Brooklyn; Geo. H. Bixby, Wm. L. Richardson, Jas. R. Chadwick, A. D. Sinclair, Boston; Gilman Kimball, Lowell,

Mass.: Albert H. Smith, William Goodell, T. M. Drysdale, J. V. Ingham, Philadelphia; H. P. C. Wilson, W. T. Howard, Baltimore; Joseph Taber Johnson, Samuel C. Busey, Washington; Robert Battey, Rome, Ga.; Geo. J. Engelmann, St. Louis; J. C. Reeve, Dayton, O.; T. A. Reamy, Cincinnati; A. Dunlap, Springfield, Ohio; J. P. White, Buffalo; Ely van de Warker, Syracuse, N. Y.

ADDRESS OF WELCOME.

After the calling of the roll, DR. WM. T. HOWARD, of Baltimore, in the name of the profession in his city, welcomed the Fellows as friends—friends by the ties of respect and personal regard; as brothers—brothers and collaborators in the great cause of science and humanity.

INVITED GUESTS.

The following gentlemen were then, on nomination of the council, invited by vote to participate in the discussions during the sessions of the Society.

Dr. W. H. Baker and Dr. W. C. B. Fifield, of Boston; Dr. J. S. D. Cullen, of Richmond, Va.; Dr. W. A. B. Norcom, of Edenton, N. C.; Dr. C. W. Franzoni, of Washington, D. C.; Dr. H. H. Battey, of Rome, Ga.; Dr. N. D. Baker, of Martinsburg, Va.; Dr. Henry Carpenter, of Lancaster, Pa.; Dr. W. Selden, of Norfolk, Va.; and President D. C. Gilman, Dr. J. Carey Thomas, Dr. G. Lane Taneyhill, Prof. G. W. Miltenberger, Prof. Alan P. Smith, Prof. S. S. Chew, Prof. A. F. Erich, Dr. B. B. Browne, Dr. Thomas H. Buckler, Prof. Christopher Johnston, Dr. J. J. Chisolm, Prof. F. Donaldson, of Baltimore.

PRESIDENT GILMAN, of the Johns Hopkins University, then made brief allusion to the work of the Society, and to the work of the University and its history, and welcomed the Society in behalf of the two foundations which bear the name of Johns Hopkins.

INTRAUTERINE MEDICATION.

DR. JAMES P. WHITE, of Buffalo, N. Y., read the first paper, in which he gave some hints regarding intrauterine medication. Passing over the pathological conditions in which it may be used, and also the therapeutics of those conditions, he spoke of some of the means which have been found available in the proper application of remedies to the surface of the neck and the body of the uterus in diseased conditions already recognized. In making an application of fluid substances, the most simple method is by injection, and that method was still advised. The experienced practitioner, however, very rarely resorts to intrauterine injections. The doctor then spoke of the necessity of enlarging the canal of the cervix, even when of normal size, in order to apply remedies to morbid conditions; but in stenosis, dilatation becomes absolutely necessary. He then spoke of the means for making dilatation, and preferably by means of sponge-tents. As ordi-

narily made, these are exceedingly imperfect. He passes a wire or cord through them to their very apex, so that, in removal, the danger of breaking them and leaving a portion in the cavity of the uterus is avoided.

He adopts incision of the lining membrane of the neck to facilitate the introduction of sponge-tent in certain cases; not deep incisions, nor as superficial as recommended for another purpose by the late Dr. Peaslee. By the incisions the canal is dilated more easily, and the endometritis is lessened, and, if properly made, no danger by reason of pelvic abscess or hemorrhage follows. A mixture which he very commonly employs after removing the catarrhal discharge from the cervix is the following.

R	Iodine.....	3 i.	
	Iodide of potassium.....	3 ss.	
	Tannin.....	3 i.	
	Glycerine, q. s. to dissolve.		M.

Dr. White then exhibited and described several instruments employed by him for making applications to the cervix and body of the uterus.

DR. ROBERT BATTEY, of Rome, Ga., then read a paper entitled

INTRAUTERINE MEDICATION BY IODIZED PHENOL.

The paper consisted in the results of a series of experiments in the use of the above remedy, which he first brought to the notice of the profession in February, 1877.

For ordinary purposes he employs iodine in solution in liquified carbolic acid in the proportion of two to eight. It does not solidify at ordinary temperature, and keeps indefinitely. It contains iodine to nearly double the quantity present in Churchill's concentrated tincture.

The energy of the solution is limited by the quantity used, and the time it is allowed to remain in contact with the surface. It gives a comparatively small amount of pain, and is rapidly absorbed as evidenced by the taste. At the end of three or four days after the application, a shedding of the superficial tissue occurs, and its removal can be facilitated by the use of a syringe. He applies the remedy usually three or four times between the menstrual periods. The cervical glands are not destroyed by its use, and in no case within his knowledge has stenosis been produced by it. Rapid cures are not to be expected, in certain cases, and several cases were related in which the remedy had been used with marked beneficial results. The results of the treatment are:

1. Perfect removal of cervical mucus;
2. Freedom from pain, due to the local anesthesia produced by carbolic acid;
3. Rapid absorption of iodine into the circulation, evidenced by metallic taste in the mouth and throat;
4. Softening and dilatation of the cervix;
5. Temporary arrest of leucorrhea;
6. Watery discharge, sometimes bloody;
7. Exfoliation of superficial layer of mucous membrane;
8. Healing of abrasions;
9. Disappearance of indurations;
10. Permanent arrest of leucorrhea;
11. Removal of villousities

without the curette; 12. Disappearance of subinvolution; 13. The menses become regular and healthy; 14. The appetite and digestion improve without medicine; 15. So freely is iodine absorbed, that alteratives are not required; 16. The form of the cervix and os are often completely changed, and assume even a virginal type; 17. Stenosis is not observed in any case; 18. Barrenness is overcome.

The two papers being before the Society, the President called upon DR. J. MARION SIMS, of New York, to open the discussion.

Dr. Sims remarked, with reference to Dr. White's paper, that he was sorry the author had not mentioned the diseases in which he employed intrauterine medication, and with reference to Dr. Battey's paper he was sorry that the author did not continue to read the histories of the cases with which he illustrated his method of practice. The cases seemed to justify the means employed; yet, on the contrary, it did not, to Dr. Sims, seem to be the best and quickest method of dealing with them. He thought, from his recollection of the histories as read, that in some of them the symptoms depended on the presence of fungoid granulations in the cavity of the uterus, and that any one of them might have been cured within four weeks, simply by using the curette without intrauterine medication, instead of consuming from five to nine months and even two years and a half. Certainly with regard to time, treatment by the use of the curette would have been the most valuable, and with regard to safety, he was not prepared to say that it was not quite as safe as intrauterine medication by the use of the remedy recommended. One serious objection to carbolic acid is its disagreeable odor; it is in that respect second only to iodoform which, on that account, he does not employ.

Dr. Sims referred to a method of treatment which he had successfully employed in the treatment of cases of uterine catarrh in which there was present an albuminous secretion that persisted despite ordinary treatment, and without regard to local applications of the whole array of caustics. The method which he had employed with success is the following:

Dilate the cervical canal, scrape the fungoid granulations, which are the seat and origin of the catarrh, completely away, and afterwards cauterize the cervix up to the os internum by means of Paquelin's cautery. In that manner he had succeeded in curing several cases.

DR. ISAAC E. TAYLOR, of New York, remarked that the course of treatment just spoken of by Dr. Sims, that is, the use of the actual cautery, was one which he had pursued for several years, and that he had given up all other methods. He uses an iron heated a little above the dark color, and applies it rapidly to the part.

DR. WM. T. HOWARD, of Baltimore, remarked that, in this class of cases, it is important to make a correct diagnosis, and the first thing he endeavors to do is to ascertain how far flexion, which is almost always present, extends. If it extends only to the os internum, the case is more easily controlled than

when it extends beyond. It is sometimes exceedingly difficult to determine how far the flexion extends. It is more apt to extend beyond the cervical canal in the multipara than in virgins, except when stenosis is present; when the anteflexion pulls upon the body and the neck at the same time. In such cases there is almost always some contraction at the os internum. He has not been able to effect a cure of the catarrh when there is present much flexion, especially of the body; but the first step in the treatment is to endeavor to correct the flexion, and then retain the uterus in position by means of a pessary. He has used Battey's preparation of iodized phenol, and in a large proportion of cases he has found it to be an efficient agent.

DR. FORDYCE BARKER, of New York, remarked, with regard to injection into the cavity of the uterus, that the use of the most bland fluid in that manner often produces the most intense pain, in cases in which the size of the canal is normal, but not so in a uterus enlarged as in pregnancy. Therefore, in the treatment of hemorrhage after labor at full term or after abortion, there is perfect toleration of the injection into the uterine cavity; consequently in that class of cases intrauterine injections are sometimes of great service. With reference to the value of the curette and intrauterine medication, he thought they were not to be compared with each other as being applicable to the same class of cases. For example, metrorrhagia dependent on fungoid degeneration of the lining of the uterus, at the climacteric period as an illustration, can be best treated probably by the use of the curette, but metrorrhagia occurring at that period does not always depend upon that cause. And in that class the curette is of no service whatever, while intrauterine medication may be employed with very great benefit. The agents which he has found to be beneficial are fluid extract of ergot, extract of hamamelis, and Churchill's tincture of iodine.

Again there is a class of cases in which the uterus is flabby, as the result of impaired nutrition frequently associated with subinvolution, and in those cases he has been more successful in the use of intrauterine medication than by the use of the curette.

There is another class of cases which, until recently, has been regarded as incurable, namely, membranous dysmenorrhea. He then related three cases which he had cured by means of intrauterine applications of iodoform in the form of cones. First dilate the cervix, then introduce cones, one every other day. He showed a syringe to be used as an applicator.

DR. JOHN BYRNE, of Brooklyn, N. Y., remarked, from more than an ordinary experience in intrauterine medication, having up to some twelve years ago injected the cavity nearly two thousand times, that success depends entirely upon accuracy in diagnosis, not only with regard to the condition of the uterus, but more especially as to the question of etiology. The uterus in a normal or nearly approaching a normal condition will not tolerate any foreign substance in liquid form in its cavity, however bland it may be, with impunity. There are certain substances which will

not be so tolerated under any circumstances, and notably nitrate of silver in solution, and chloride of zinc; they are most dangerous in any condition of the uterus. The conclusion which he had reached was that, if great accuracy in diagnosis is observed, intrauterine medication, judiciously resorted to, is of immense value, and may be employed with perfect safety; that the farther the departure of the uterus from the normal to the pathological standard, the more tolerant it becomes of all medication and all interference: that liquid injections he had long since abandoned, with a single exception, namely, chloride of sodium water, after the use of the curette, securing a full free return for the fluid.

The method of treatment referred to by Dr. Sims, for certain cases of uterine catarrh, he had used for several years and with very satisfactory results. The use of the curette is a successful method of treatment, but there are cases in which the cautery will succeed when the curette failed.

DR. PAUL F. MUNDÉ, of New York, remarked that, in the light of an experience in intrauterine medication of various kinds in more than two thousand gynecological cases, he had long since discontinued the use of intrauterine injections. He has for several years made applications by means of an instrument which operates in precisely the same manner as that described by Dr. Barker, Buttles' hard-rubber uterine syringe, which method was described by Dr. Lawson some twelve years ago, and since by Dr. Lente, both in the *New York Medical Record*. Drawing the syringe full of the fluid to be injected, he wraps the slender nozzle loosely with absorbent cotton, introduces it within the uterine cavity, and then slowly expresses the fluid, thus soaking the cotton very gradually. Even from this, the most effectual, while also the most harmless manner of making intrauterine applications through an undilated os, he had seen three cases of uterine colic with moderate shock, one (in which a solution of nitrate of silver 3 i. to 5 i. was used) so severe as to keep the patient in his office for several hours and necessitate a hypodermic injection of morphine. Excepting these three cases he had never seen an unpleasant result follow the application. He had even applied fuming nitric acid to the endometrium in this manner, but had once witnessed quite severe shock follow the use of this strong caustic.

The PRESIDENT remarked that he regarded intrauterine medication in many cases as exceedingly dangerous, and, as a general rule of practice, it was much more honored in its breach than in its observance.

DR. WM. GOODELL, of Philadelphia, thought that passing the string through the entire extent of the sponge-tent has one theoretical advantage, but it has a great disadvantage, and that is, causing the sponge to be so compressed that its width is very much increased, and hence a proportionately greater amount of force is required to remove it, such as is liable to be followed by abrasion, cellulitis, and peritonitis.

He also objected to making incisions in the mucous membranes

of the cervix before using the sponge-tent; the danger is from subsequent absorption of septic material.

To avoid the difficulty in removing the sponge-tent, he introduces *one* and surrounds it by laminaria tents, and makes all the dilatation necessary with the *first* sponge-tent; for it is in the subsequent use of the sponge-tents that the danger rests.

With reference to intrauterine medication, he had within the last three or four years been using it with a great deal more effect than formerly. He rarely uses the syringe as an applicator, but by injecting carefully and slowly the solution employed—four to eight drops of Calvert's No. 4 solution of carbolic acid, or Dr. Battey's solution with hydrate of chloral added. With reference to injections, if the womb is positively diseased, there is no harm from using fluid in its cavity, because the os is patulous, but if, as in a hysterical subject, it is difficult to determine whether or not the endometrium is diseased, they should be avoided. There is a class of cases in which he believes, although not able to demonstrate it, that the pain is due to fissure at the internal os, and such cases he has cured by forced dilatation of the cervical canal, and making local applications at that point.

DR. NATHAN BOZEMAN, of New York, thought sufficient estimate had not been placed upon displacements of the uterus as a factor in uterine catarrh. There is present, almost always, either anteversion or anteflexion, and, as Dr. Howard had said, the proper thing to be done first is, to correct such displacement with its vaginal distortion, and unless that is done, it is, in the great majority of cases, quite impossible to remove the uterine catarrh. His favorite treatment has been by means of vaginal cylinders of carbolized cotton, for the purpose of correcting the displacement. He is not entirely opposed to intrauterine medication, but when the displacement is corrected, almost any kind of application can be made with satisfactory results.

DR. H. P. C. WILSON, of Baltimore, believed that, when properly and gently administered, intrauterine medication might be expected to yield good results, the same as are obtained by the local application of remedies to other mucous membranes, as to the throat, the urethra, etc. He thought one reason why we are not so successful as we might be in the use of intrauterine medication is, because of the imperfect manner in which the applications are made, improper manipulations, etc., and too much such medication is often a reason why we are not more successful. He had abandoned injections into the uterine cavity. He uniformly employs Sims' speculum and applicator. He never uses tents unless it is impossible to avoid them, and then he always covers them with gold-beaters' skin.

DR. THADDEUS A. REAMY, of Cincinnati, remarked that he never employs sponge-tents; he employs slippery-elm or laminaria. He never uses a single tent; he employs three or four small tents, rather than one large one. He had used Dr. Battey's preparation, but had abandoned it in consequence of its unpleasant odor. He thought that, in many cases of catarrh in which the uterus

is enlarged and the disease has become chronic, great benefit is derived from dilating the cervix, outside of any consideration of being able to reach the cavity of the uterus, or outside of any consideration connected with medication of the cervical walls. The pressure which is made on the diseased surface increases the muscular contraction of the uterus, and in many cases in which the disease has become chronic, that is an element to be considered. In cases of what is commonly called incurable cervical catarrh, he has for many years dilated the cervix thoroughly with sea-tangle tents, and then applied Churchill's tincture of iodine, or some such preparation, and he has been pleased with the results obtained. The plan is, to dilate at different times, and make the local application. For fungoid degeneration he uses the curette. For villous degeneration, the use of the curette alone is not sufficient; the pressure from thorough dilatation should be added. He also disapproves of incising the mucous membrane of the cervix, as suggested by Dr. White; it does not facilitate dilatation, and certainly lays the foundation for the absorption of septic material.

His practice for membranous dysmenorrhea is to use the wire curette only moderately sharp, the day before the return of the menses, or when the first symptoms manifest themselves, when the first pain begins; curetting the entire endometrium. He does not inject the cavity of the non-puerperal uterus.

The PRESIDENT remarked that he took the position that intra-uterine medication, carried above the os internum, should be given up as very hazardous, in many cases as very useless, and as a means of treatment which yields disappointing results. He believed that, when uterine catarrh extends above the internal os, there is, as a rule, some special cause for it, such as flexure, or version, and less commonly, but very commonly, uterine congestion induced by only a slight degree of uterine descent. Treat the cause, and the secondary manifestation disappears. In cases of fungoid degeneration following abortion or labor at full term, intrauterine medication is so far inferior to the curette that it should not be adopted. There is another class of cases, in which the disease disappears as if by magic, when trachelorrhaphy is performed. In still another class of cases, constitutional treatment is of great service, but far be it from him to advocate constitutional measures in such cases in preference to local treatment. The point of his argument is, that in all these cases there is generally something which gives rise to the symptoms, and when it is removed, the symptoms will disappear.

DR. THOMAS continued his remarks at considerable length, and the discussion was closed by Drs. White and Battey.

NOMINATING COMMITTEE.

The President appointed Drs. Fordyce Barker, Isaac E. Taylor,

and W. L. Richardson as Committee on Nominations. He also appointed Drs. A. J. C. Skene and N. Bozeman as Auditing Committee.

The Society then adjourned, to meet at 3 P.M.

First Day—Afternoon Session.

The Society was called to order by the President at 3 P.M.

The first paper was one on

THE TREATMENT OF PUERPERAL SEPTICEMIA BY INTRAUTERINE INJECTIONS,

presented by DR. E. W. JENKS, of Chicago, and read by the Secretary.

The paper contained an extended reference to the literature of the subject, the varying views which from time to time have been held, and then the author gave the following conclusions: 1. Puerperal septicemia is a prominent cause of death in puerperal cases, and the indication for treatment is to prevent absorption of septic material; 2, the objection that has been made to the use of intrauterine injections in the non-puerperal diseases is not applicable to them as prophylactic treatment of puerperal septicemia; 3, a number of deaths have taken place when they have been used for other purposes than to wash out the cavity of the uterus; 4, when death has occurred, the fatal result has not been in consequence of the method of treatment, but in consequence of the improper manner in which the cavity of the organ has been invaded; 5, to secure immunity from danger as much as possible, the following precautions are to be observed: *a*, the neck should be well dilated; *b*, air must not be admitted; *c*, the injection must be made without much force and slowly; *d*, the temperature of the fluid should not be lower than that of the body; *e*, powerful astringents are not indicated; 6, the administration of the injections should not be intrusted to a nurse, or to any inexperienced person; 7, the intrauterine injections should invariably be used if there exists: *a*, a premature cessation of the lochia with constitutional disturbance; *b*, when there is a purulent or fetid discharge; *c*, whenever there is abnormal lochia associated with elevation of temperature and increased frequency of the pulse; 8, intrauterine injections should be more generally used as prophylactics, for the following reasons: *a*, if properly administered they are capable of removing the material which may give rise to septicemia; *b*, there are no other modes which act so speedily or accomplish better results in those conditions peculiar to the puerperal state; *c*, they are peculiarly serviceable in causing the expulsion of clots, and aid markedly involution of the uterus; *d*, they have averted, in a remarkable manner, death which would otherwise inevitably have taken place.

IDIOPATHIC SEPTICEMIA IN GYNECOLOGICAL PRACTICE,

was the title of the next paper, and was read by DR. JAMES R. CHADWICK, of Boston.

By the term "gynecological practice" he included obstetrical; and defined septicemia as a constitutional disorder of limited duration, caused by the entrance into the circulation of a certain quantity of septic material [Burdon Sanderson]. As illustrating the character and symptoms of the disease, he gave the histories of five cases which had the following features in common: a denuded surface in the uterine cavity and chill; there was no pain, vomiting, or other sign of inflammation, but high fever; and the special symptom mentioned as belonging to most of that class of cases, was an abnormal insensibility to pain, taken in conjunction with high fever.

In treatment, he gave preference to permanganate of potash as a disinfectant, making a solution of a deep claret color. One special advantage of the fluid is the change in color, produced by the presence of putrid matter; the change being from deep claret color to deep yellow, so long as putrid material is present. The injections into the uterus should be discontinued if chills follow. The danger from air entering into the sinuses is due to the amount, the entrance of a considerable quantity being required to do harm.

PUERPERAL SEPTICEMIA.

DR. A. D. SINCLAIR, of Boston, reported twenty-one cases of puerperal septicemia, which occurred in the Boston Lying-in Hospital. Of those nine died, and twelve recovered. The following were the results of his observations in the cases referred to:

The foregoing cases occurred consecutively, and as drawn up simply pointed to conditions favoring the presence of septicemia. The cases all presented similar features, and, taken together, seemed to illustrate the following points: 1, causes; 2, conditions favoring the invasion; 3, early appearance of the symptoms; 4, symptoms in order of occurrence; 5, treatment and comparative value of it; 6, sequelæ.

1. *Causes*.—Direct contagion, since it has occurred where lying-in women were aggregated, and septic material present; private cases being extremely rare.

2. *Conditions favoring the invasion*.—1, Prolonged and severe labors; 2, torn perineum or lacerated cervix; 3, retention of the foreign matter in the uterus; 4, nervous condition.

In these 21 cases, there were 5 of prolonged and tedious labor; 10 with torn perineum and lacerated cervix; 1 with retained placenta; 1 putrid fetus. Seven were instrumental labors. These make up 17 of the 20 cases, all of which come under one of the three heads.

Of the remaining 3 cases, 2 were labors which continued over 22 hours; and in the third case no mention was made of perineum, though the woman bore a child that weighed $9\frac{3}{4}$ lbs.

3. *Symptoms appearing on the second or third day, almost invariably in the following order:* 1, chill; 2, rise of temperature and pulse; 3, headache; 4, tenderness over the uterus; 5, offensive lochia, though not always present; 6, general aspect of patient similar to that of typhoid fever; 7, vomiting, which may be one of the first; 8, frequent cystitis; 9, watery discharges from bowels, which may occur early.

Treatment.—1, quinine to cinchonism; 2, brandy to alcoholism; 3, nutriment, all that can be borne in the shape of milk, beef-tea, egg-nog, etc.; 4, uterine douches of permanganate of potash and carbolic acid; 5, sponge-baths.

The douches were given every three hours. The brandy was given in one case, $\frac{5}{8}$ ss. every half hour without intoxication, and beef-juice and tea of six pounds of meat in one day.

From these cases it would seem that torn perineum and lacerated cervix are very important features in the susceptibility to septicemia. Once granting septic material to be present, and the chance of absorption was greatly enlarged. Further proof of that fact was that, in a ward with these patients, all having the same nurse, with equal chances of contagion, all escaped but three with lacerated perineum or cervix, and also in two cases where the hospital seemed perfectly free from septicemia, but reappeared in patients with lacerated cervices.

Sequelæ.—Subinvolution of the uterus.

Nervous State.—The fact that these patients were poor unmarried women in many cases, with no means to support them after leaving the hospital, may be an important cause of the susceptibility to fever, while increasing the gravity of an existing case.

The subject of puerperal septicemia being before the Society, the President called upon

DR. GILMAN KIMBALL, of Lowell, Mass., to open the discussion. He remarked that, although he had seen a great deal of septicemia following ovariectomy, he was yet ignorant of its nature, and of what to do for the patient when it occurs. One thing had struck him as remarkable, and that was, that some of the worst cases he had ever had—cases in which the discharges incident to ovariectomy had been of the worst character, and most persistent, had really done the best: while in many other instances, in which there was no discharge at all, septicemia or symptoms like those of septicemia had developed, and fatal poisoning had gone on very rapidly. When it does occur, his method of treatment is mainly stimulant and nutritive.

DR. A. J. C. SKENE, of Brooklyn, remarked that he believed that, when we employ antiseptic management in puerperal cases, as antiseptic surgery is now employed, we shall improve in our results the same as the general surgeons have done. He was inclined to think that the use of intrauterine injections would become, if it had not already become so, very circumscribed indeed; and that in the future the authors of the papers would not use them so much as they had done in the past. When all the means at our command for the purpose of avoiding septicemia are employed in obstetric

practice, there will be less occasion to treat the disease itself. He also thought that intrauterine injections are a means which cannot be employed without danger: and, more than that, the use of the vaginal and uterine douche does not always guard against the occurrence of septicemia, after the uterus has been injured. In the post-partum uterus, he thought in some cases it was almost impossible to introduce instruments without leaving perhaps one-half of the organ untouched by the fluid injected.

DR. GEO. J. ENGELMANN, of St. Louis, remarked that he had employed intrauterine injections in puerperal cases, but he thought they were dangerous; yet less so in puerperal than in non-puerperal women. They had, however, proved of service in his hands; for example, in removing remnants of decomposing placenta. He preferred the permanganate of potash to carbolic acid, both on account of its convenience, and the absence of liability to produce poisoning, as he had seen done by the use of carbolic acid. He then referred to the malarial element that entered into these cases in the Mississippi valley, and sometimes large doses of quinine were sufficient of themselves to control the affection. He also referred to what he regarded as the injurious effects of veratrum viride in these cases—a remedy sometimes employed.

DR. FORDYCE BARKER, of New York, continued the discussion by referring to the limited and small number of cases in which intrauterine injections may be valuable. He had already described that class in his published book, and would not repeat it that time. He then referred to two cases; one in which it was his conviction death was produced by intrauterine injection, and one in which, as he believed, the life of the woman was saved by the same measure. The injections should never be trusted to the nurse. While he is the advocate of veratrum viride in the treatment of puerperal diseases, septicemia was one of those diseases in which it should not be used, and for reasons that he has already pointed out. He was the first to advocate the use of large doses of quinine in this disease, independent of the malarial element.

DR. MUNDÉ asked Dr. Chadwick whether the term *autogenetic* septicemia would not be more correct than “idiopathic” S., which means septicemia without local injury or appreciable source of infection; while in Dr. Chadwick’s cases the infection evidently arose from decomposing substance in the uterine cavity.

DR. CHADWICK accepted the correction.

The discussion was continued by Drs. H. P. C. Wilson, of Baltimore; W. Goodell, of Philadelphia; W. T. Howard, of Baltimore; James D. Trask, of Astoria, N. Y.; A. F. Erich, of Baltimore, and the President.

The Society then adjourned to meet at 9:30 A.M., Thursday, September 18th, 1879.

Thursday—Second Day—Morning Session.

The Society was called to order by the President at 9:30 A.M.

INVITED GUESTS.

The following gentlemen were elected members by invitation :

Dr. E. A. Atkinson, Dr. Thomas F. Murdoch, and Dr. John Dickson, of Baltimore; Dr. A. F. A. King, Dr. W. W. Johnson, and Dr. T. Hansmann, of Washington, D. C.; Dr. W. H. Geddings, of Aiken, S. C.; Dr. D. W. Lassiter, of Petersburg, Va.; Dr. F. Wilhoft, of New Orleans, and Dr. W. W. Baird, of Washington, N. J.

The first paper was read by Dr. S. C. BUSEY, of Washington, D. C., and entitled

A CONTRIBUTION TO THE PATHOLOGY OF THE CICATRICES OF PREGNANCY.

The author of the paper began with a review of the literature of the subject, in which were presented the views of Credé, Schultze, and Hecker, which relate especially to the value of these scar-like streaks and spots, as a sign of existing or previous pregnancies. Then followed a discussion of the anatomy of the striæ and the nature of the lesion giving rise to those appearances. The investigations of Küstner, accompanied with photographic illustrations of sections of striæ prepared by him, were presented, together with original microscopical examinations of the normal integument and of the striæ. From comparison of these histological appearances, Dr. Busey reached the conclusion that the striæ are not caused by rupture of the Malpighian layer, as generally believed, nor separation of the fibres of any of the layers of the skin. He then discussed the several methods of vesicle formations, and concluded that the striæ of pregnancy do not constitute any form or stage of vesiculation, but that the hydropic condition, not infrequently observed, is to be ascribed to the transsudation of fluid into the lymph-spaces of the connective tissue. In conclusion, he maintained that the striæ of pregnancy are localized atrophies of all the constituent layers of the integument, with compression and partial obliteration of the lymph-spaces. From a review of the clinical aspects of the several forms of striæ, he was forced to exclude distention as the only factor of causation; and to insist that their appearance is the result of the usual changes occurring during pregnancy, and their absence the expression of some special condition or peculiarity of organization which presents a successful resistance to the usual activities and changes incident to utero-gestation.

On motion made by Dr. Barker, the discussion of the paper, which its high scientific character rendered impossible, was omitted.

PROLAPSE OF THE OVARIES

was the title of a paper read by Dr. PAUL F. MUNDÉ, of New York. He had chosen the intrapelvic dislocations of the normal or but slightly enlarged ovaries as the subject of his paper, as the displaced organ was very frequently, either primarily or secondarily, enlarged, congested, or inflamed, and the treatment of both conditions could, therefore, very properly be discussed together. He discussed the subject entirely from a practical and clinical point of view, and had been induced to take up the topic chiefly

by the great frequency with which he had met ovarian displacements, often when least expected; by the symptoms which they develop; by the difficulties experienced in their effectual treatment, and largely by the defective discussion which the subject had received in the majority of text-books. Dr. Mundé then referred to what recent authors have said upon the subject—Barnes, Beigel, Thomas, Olshausen, Schroeder, Rigby, Storer, Warner, Blake, and others.

The object of the paper was to show that displacement of the ovary is a very common, and by itself a highly distressing affection, worthy of a separate place in the text-books, and requiring efficient treatment independently of the congestion and enlargement of the organ, which may or may not accompany it. Before proceeding to the subject proper, Dr. Mundé referred briefly to the anatomical relations of the ovary, in order to show how so small and light a body may become so displaced as to be palpable at the very bottom of Douglas' pouch. His description was taken mainly from Olshausen and Beigel, and from Savage's plates.

The practical and clinical part of the paper was based upon observations made in 1,600 unselected gynecological cases which have come under his care during the last few years, and of which he has accurate notes. Of those, there were 145 in which one or both ovaries were palpable; in 68 cases the ovaries retained their normal position; in 77 cases they were prolapsed; in 55 cases they were normal in size; and in 92 cases one or both were inflamed or enlarged. Of the 145 cases, 139 were married, and 6 single, 8 were nulliparæ, and 131 parous women. In 36 of the 145 cases, one or more normal non-displaced ovaries were palpable by bimanual examination; 22 times the left; 5 times the right; and 8 times both ovaries. The statistics extended further to inflamed, enlarged, but not displaced ovaries, enlargement of dislocated ovaries, etc. Of the intrapelvic dislocations, there are four varieties: "1. Retrolateral into the shallower lateral pouches behind the broad ligaments; this variety is usually primary, and often leads to the 2. Retrourterine into Douglas' pouch; 3. Ante-uterine into the vesico-uterine or paravesical pouch; and, 4. Into the infundibulum of an inverted uterus." Under the head of etiology, the following conditions were noticed as favoring or producing dislocation of the ovaries: "1. Enlargement of the ovary. 2. Displacement of the uterus. 3. Relaxation of the supports of the uterus and ovaries. 4. Inflammatory adhesions. 5. Sudden jarring or concussion of the whole body. 6. Pressure from above, as by tumors, fecal accumulations, etc."

The diagnosis is easily made by vaginal examination. The author of the paper reached the following conclusions:

"1. The subject of prolapse of the ovaries has not received in the text-books and periodicals the attention which its importance as a separate affection demands."

"2. Ovarian prolapse, owing to the normal mobility of the organs, is a very common affection, frequently accompanying

retro-displacements of the uterus, and in by far the greater number of cases the displacement is backward into Douglas' pouch."

"3. The normal, not markedly enlarged, ovaries frequently prolapse, either in consequence of retro-displacements of the uterus, sudden jarring of the body, puerperal subinvolution, or menstrual congestion. More frequently, still, does prolapse occur in consequence of moderate enlargement of the ovaries through enlargement or inflammatory hyperplasia."

"4. Their prolapsed condition causes even normal ovaries in time to become hyperemic, hyperplastic, and hyperesthetic, partly through vascular obstruction, and partly through the injuries to which they are subjected during defecation and coition. Already enlarged and degenerated ovaries for similar reasons undergo a more rapid pathological change in consequence of their displacement."

"5. In rare instances displaced ovaries have been found to become spontaneously replaced: thus after the cessation of menstrual engorgement, and through accidental favorable positions of the patient. As a rule, however, a displaced ovary requires replacement by artificial means."

"6. The symptoms caused by displacement of the normal ovaries, while more or less vague, are sufficiently severe to attract the attention both of the patient and the physician. Those of displacement of the hyperemic and inflamed ovaries, while also vague in a diagnostic sense, are frequently agonizing in the extreme, and entirely out of proportion to those experienced during ordinary uterine disease. Although the rational signs of ovarian displacement in themselves present nothing characteristic, collectively they are of significance."

"7. The diagnosis of ovarian prolapse is exceedingly easy to the practised touch per vaginam, rectum, or conjoined manipulation."

"8. The treatment consists in replacing the organs manually, or by position, or by replacing the uterus if displaced, which is readily possible if the ovaries are not adherent, and then retaining them in position by tampons or properly and peculiarly constructed pessaries, adapted and moulded according to the needs of each individual case. Thus the posterior bar of the pessary may be made unusually broad and thick, or bevelled in the centre, or depressed on one side, so as to relieve the prolapsed and tender ovary from excessive pressure. After being fitted in malleable material, the shape may be permanently fixed in hard rubber."

"9. If the ovaries are too tender to permit replacement, the hyperesthesia should be reduced by proper antiphlogistic and sedative measures, and then reduction may be accomplished. Indeed, if feasible, it is advisable, in every case, to endeavor first to relieve the hyperemia and hyperplasia, so long as the organs are readily accessible, and then replace and retain them."

"Much ingenuity and patience may be required to devise

proper means for supporting the inflamed and tender ovaries, which, once replaced, should be treated by the well-known remedies for chronic ovaritis."

"10. If the ovaries are adherent, the treatment resolves itself into antiphlogistic and narcotic measures. In cases of great local and constitutional disturbance, the last resort—their removal—may be suggested and adopted."

Being called upon by the President to open the discussion, DR. ROBERT BATTEY, of Rome, Ga., remarked that the subject was one upon which he had no settled opinion. He had not been able to connect prolapse of the ovary with disease of the organ in the relation of cause and effect. In his observation, it had not occurred to him that in prolapse of the ovaries there is any definite positive evidence of disease as an almost universal rule. In by far the greater majority of cases, prolapsed ovaries were diseased, but on the other hand he called to mind numerous cases of diseased ovaries entirely unassociated with prolapse of the organ.

For the relief of ovarian and uterine pain he had employed "Mrs. Betts' utero-abdominal supporter" with great benefit. How it acted he would not attempt to explain.

DR. FORDYCE BARKER, of New York, believed that prolapse of the ovaries is a quite frequent affection, agreed with the author of the paper that it occurs most frequently upon the left side, and explained that fact by the position of the rectum and habitual constipation. In treatment, the thing to be accomplished is to restore the organ, as far as possible, to its normal position, to keep it there, and to obviate or remove all the causes which develop or perpetuate this pathological condition.

Attempts at replacing the prolapsed organ are not always successful, yet it is always worth while to make the attempt; and for overcoming plastic exudation, he suggested hot-water injections and the use of mercury in the form of minute doses of the protoxide continued for some time.

To retain the organ in position he recommended the cotton tampon, aided by a solution of tannic acid, equal parts with water.

To correct the habit of constipation, he was accustomed to give a laxative composed of equal parts of sulphate of magnesia, carbonate of magnesia, tartrate of potassa, and sulphur.

DR. S. C. BUSEY, of Washington, D. C., remarked that his experience corroborates almost entirely that expressed by the author of the paper. From his experience he would say, however, that structural changes in the ovaries are the secondary step and usually secondary to displacement of the uterus. He also spoke of the significance of a circumscribed pain upon some part of the buttocks as a symptom of prolapse of the ovaries. He further thought that external abdominal support acts by restoring the equilibrium of pressure which the superincumbent viscera exert on the pelvic organs.

DR. ALBERT H. SMITH, of Philadelphia, thought that if the sub-

ject of prolapse of the ovaries received more attention than it did, if its importance were more fully recognized, and more careful examination made with regard to that condition, there would be a lesser number of cases in which the patient goes about from one physician to another, and submits to one and another form of treatment. He thought that, in most cases of prolonged pelvic trouble, painful in character, and in which various methods of treatment have been adopted without benefit, prolapse of the ovaries is the pathological condition present. He thought there was no positive means of diagnosis in these cases, except by the postural method, placing the patient in the knee-chest position, and examining both by the vagina and rectum. He had not seen good results from the treatment of prolapsed ovaries by means of pessaries. He had obtained the best results from the use of a simple bag of tarlatan stuffed with tannic acid. There were many cases, doubtless, which could not be relieved unless it was by means of Dr. Battey's operation.

The discussion was continued by Drs. CHADWICK and BATTEY, the latter of whom said that he wished to qualify what he had said in opening the discussion, by stating that his experience was so slight in this particular affection that he did not feel justified in expressing any decided views on the subject. The discussion was closed by Dr. MUNDÉ, who said that the limited time had necessitated the omission, during the reading of his paper, of numerous points which had been referred to during the discussion.

THE GYNECOLOGY OF THE FUTURE AND ITS RELATION TO SURGERY.

Annual Address by the President.

The hour of eleven having arrived, the President, Dr. T. GAILLARD THOMAS, of New York, called Dr. H. P. C. Wilson, First Vice-President, to the chair, and then proceeded to deliver the annual address on the subject, "The Gynecology of the Future and its Relation to Surgery." After a few words of welcome on the pleasant reunion, a brief reference to the influence of such societies as this, a fitting tribute of respect to the late Dr. Marmaduke B. Wright, of Cincinnati, an Honorary Fellow, and a return of sincere thanks for the honor which the Society had conferred upon him, Dr. Thomas passed to a few general considerations in reference to the department to which the members were especially devoting themselves.

Among the chief influences which retard gynecological and obstetric progress is the lack of facilities for demonstration of special views and operations. The result of the present state of affairs regarding clinical midwifery and gynecology is the creeping into our literature of a spirit of dogmatism, which weakens them and gives strength to our opponents. Dogmatism is the living worm of superficiality and undeveloped knowledge. The chief danger from dogmatism is from its seductiveness and fascination. It is the spirit of dogmatism, in the absence of

free demonstration, that creates so many pathological camps in our midst, and nurtures so much diversity of opinion upon points on which all should agree, and gives to remedial measures such exaggerated prominence for short periods.

A few of the once popular remedial measures were mentioned. Sponge-tents were once employed for almost every conceivable ailment, but now have their proper position, as most important aids to diagnosis and treatment, at the same time are attended by great advantage and decided dangers.

Cervical section was seized upon with enthusiasm and performed so frequently that the prejudice resulting from this gross abuse seemed likely at one time to sweep it away, but to-day it stands upon its proper basis as a valuable surgical resource.

No one familiar with Emmet's operation for trachelorrhaphy can doubt the beneficent results of that excellent conservative procedure, and yet even that seems destined to do a certain amount of evil before it stands upon reasonable middle ground. The proper use of such procedures as mentioned he does not criticise, but he censures those who adopt these or any others as cure-alls, and overcome the doubts of the inexperienced by exaggerated and dogmatic assumptions.

Hospital facilities for demonstration and comparison would greatly diminish such evils. Another great need, not only in this department, but in general medical literature, is proper reviewing of books and pamphlets. In this country such work is in a condition of deplorable fatuity. The ringing tones of just and honest criticism are rarely heard. He expressed the wish that the Society would create a standing committee on reviews, which would as a body pronounce judgment upon the current literature of their department, and as a whole bear the responsibility of criticism, so severe, if necessary, as to border on absolute denunciation. Should that be done, they would very soon see their course endorsed and imitated by representatives of other special departments, and they might look for the advent of time when such a judicial guillotine would strike terror into the hearts of those who strive for advertisement and notoriety, or for an outlet for malevolence and jealousy by prostituting the medical press.

The progress in obstetric and gynecological surgery is still viewed by the general surgeon with a mild and gradually diminishing hostility, and the opinion is still to a too considerable extent prevalent, that nearly all of the operations in obstetrics and gynecology can be as well performed by the general as by the special surgeon, and are mere clinical fields for demonstration and instruction in their department, afforded by every general hospital. The claims of this special department of surgery should be more fully and cordially admitted.

Dr. Thomas then passed to the theme of his discourse. Until the year 1850, it may with justice be said that gynecological surgery had no existence; that is, all was uncertain as to principles. During the decade next following, the subject burst Minerva-

like upon the profession, and ever since that time has steadily advanced towards a perfected system. The sudden development was in accordance with a rule, namely, the impetus imparted to it by the influence of rare and stupendous genius, which in a brief period effected more than years of patient toil before accomplished. Von Graefe was the Moses who led ophthalmologists out of the house of uncertainty and out of the land of darkness; Rokitansky and Virchow have given a wonderful impetus directly to pathological anatomy, but the one had the ophthalmoscope to act as a pillar of light to him, and the others had the microscope to sharpen their vision.

In 1846, anæsthesia was given to man, and is the physical agency which brought theory under subordination to demonstration, and as by magic gynecological surgery sprang into renewed life at the hands of Simpson in Scotland, Baker Brown in England, Marion Sims in America, and Gustav Simon in Germany.

The abuse of gynecological surgery soon created a prejudice in the minds of conservative men, which still lives, although the day of its usefulness has well-nigh passed away. But to prevent the pendulum from swinging too far in an opposite direction, shall it not be boldly asserted to the profession at large, that the surgery of obstetrics and gynecology stands to-day upon tenable, reasonable, middle ground, and shall it not be maintained unflinchingly that without it thousands of suffering women, who are susceptible of complete relief, must go on leading, to the bitter end, lives of sorrow and of pain?

He assumed that an enlightened conservative surgery is the pivot around which is to revolve the gynecology of the future; and that a gynecologist of the future, without surgical attainments, will be as impossible as an ophthalmologist without them to-day. But he did not urge the claims of surgery at the expense of those of constitutional treatment in gynecology: on the contrary, he was prepared to advocate the great importance of the latter. The two should work together if the greatest good is to be obtained; the one, however, never being substituted for the other. To illustrate his position, he referred to the large and important class of morbid conditions which arise from the process of parturition, and first to those due to laceration of the perineum. Septicæmia, subinvolution of the vagina, and a great variety of chronic diseases of the pelvic viscera can be prevented by its early repair by a surgical operation. When such neglect is regarded, as it surely will be, as a flagrant obstetrical dereliction, then the number of women affected by pelvic disorders will become suddenly and wonderfully diminished. The time is also at hand for the complete obliteration of the idea that the functions of the obstetrician consist in watching the parturient couch, for such are the practitioners who send forth women with a long list of pathological states which cling to them for life, sapping their usefulness, and destroying the happiness of their households. Reference was then made to inflammatory ulceration of the cervix uteri, the causes of uterine displacement, cystocele and rectocele,

malignant disease of the uterus, uterine fibromata, and section of the cervix for the relief of sterility and dysmenorrhea, as illustrating what he meant by gynecological and obstetric surgery. Medical and surgical gynecology are united by what the mechanic calls dove-tailing.

In medicine, there is a body which has lived by recruiting new members in succeeding ages ever since our art was founded by the wise old man of Cos, and which lives with undiminished desires and ambition in our own times. The peculiar function of that body is to decry every advance, to deprecate every effort at progress, and under the fraudulent guise of conservatism to smother every attempt at improvement by abuse and misrepresentation. A wise conservatism is like a compass to the mariner, but its "counterfeit presentment" is what he denounces. The sincerity of those men offers no more palliation for their course than that of the sincere religionists who burned at the stake those who opposed them.

Narrowmindedness is a misfortune; obstinate and perverse opposition to the truth in the face of evidence is a crime. The one commands our pity; the other merits our unqualified condemnation. He who does not understand should be enlightened; he who will not understand should suffer for his waywardness. As every step in our calling, which in diagnosis or pathology subordinates theory to demonstration, constitutes a steady advance of medicine towards the position of an exact science, so does every one who puts a portion of its domain under the control of "hand-work," "surgery," advance treatment from theory towards certainty. Shall we stand idle when every other department of medicine is making rapid advance by the recognition of that important truth? Recognizing and fully appreciating that the gynecological surgeons of our times are steadily advancing upon the road of progress, and assured that those procedures which have been most abused now stand upon the safest foundation, the Fellows were urged to strive without ceasing to bring more and more completely the pathology of their department under the domain of their senses, the control of their hands.

After the President's address, a paper presented by Mr. T. SPENCER WELLS, of London, England, was read by the Secretary. It was entitled

A REPORT OF A SUCCESSFUL CASE OF BATTEY'S OPERATION.

The patient was aged 50 years, both ovaries were removed and she recovered. The terrible pain from which she suffered before the operation was not entirely removed, but sufficiently so to cause the woman to say that she had been paid for undergoing the operation. A sanguinolent discharge continued at intervals from the vagina, and the intervals becoming shorter and more regular led to the suspicion that menstruation would finally be fully re-established.

The Society then adjourned to meet at 2 o'clock P.M.

Second Day—Afternoon Session.

The Society was called to order at 2 P. M. by First Vice-President DR. H. P. C. WILSON, of Baltimore.

INVITED GUESTS.

The following gentlemen were elected members by invitation : Drs. James E. Morgan, F. Howard, S. O. Ritchie, of Washington, D. C.; and Dr. Hunter, of Martinsburg, Va.

DR. JOHN BYRNE, of Brooklyn, read the next paper which had for its title

KOLPO-CYSTOTOMY BY GALVANO-CAUTERY.

Kolpo-cystotomy as a means of restoring continuous artificial drainage of the bladder is an American operation. The author then gave a history of the operation, referred to his instrument devised to facilitate the operation, the circumscribed character of its action, and the reasons why the operation is the most efficient method of securing vesico-vaginal drainage. There is no destruction of tissue beyond the outline of the blades of the instrument he has devised and employed. He had not used the thermo-cautery, believing it to be dangerous and unsuitable for operations in cavities among delicate structures, even when guarded by Wilson's jacket.

The paper being before the Society for discussion,

DR. HENRY J. GARRIGUES, of New York, remarked that he could not entirely endorse the criticism offered by Dr. Byrne regarding the thermo-cautery. From personal experience he was not aware that the radiating heat is less from the galvano-cautery than from the thermo-cautery. That, however, could be determined by physical experimentation.

The paper was also discussed by Dr. White, and the discussion was closed by Dr. Byrne.

COMPLETE CONGENITAL AND ACCIDENTAL ABSENCE OR ATRESIA
OF THE VAGINA IN THE PREGNANT AND NON-PREGNANT
FEMALE, TREATED BY THE TEARING OR LACERATING PROCESS,

was the title of a paper presented by DR. ISAAC E. TAYLOR of New York, which would have been read had time permitted. The following is an abstract: In it he remarked that cases of congenital absence of the vagina have by some authorities been considered rare and remarkable, but when two lives are involved, their importance is great. The treatment of this class of cases has always been regarded by surgeons as difficult, and as liable to give rise to serious if not fatal results. Whatever the exact nature of the defect may be, it is conceded that the accidents which cause death when the operation is performed are nearly identical. The operation is undertaken to prevent the flow of blood into the peritoneal cavity from a distended uterus and Fallopian tubes, or to prevent rupture of the tubes. The vagina may be totally or only partially absent. In nearly all of the cases which he has observed, in which the vagina terminated in a cul-de-sac and

in which a uterus was present, the cul-de-sac was usually from one to one and a half inches in depth, rarely two and a half inches, and smooth and tense. In some instances the vagina had an opening into the rectum, the anus, or the urethra, and pregnancy occurred.

Dr. Taylor then related the history of a case of complete congenital atresia of the vagina, with pregnancy, and safe delivery of a living child. It was treated by the tearing process with the finger-nail. The mother made a good recovery.

As bearing upon the subject of atresia of the vagina during gestation, he presented the interesting case reported by Dr. R. P. Simmons in the *St. Louis Med. Examiner* in February, 1847. There was complete obliteration of the vagina by dense fibrous structure. The woman became pregnant. In that instance the knife was used, an opening effected, the child safely delivered, and no untoward symptoms followed. Dr. Simmons asked the question, and Dr. Taylor joined in the query, "How did the menstrual fluid find its exit, in either case, from the uterus, and by what law of the animal economy did conception take place?" "Was there a vicarious secretion from the inner surfaces of the labia pudenda or contiguous parts, or did the menstrual fluid permeate the fibrous structure blocking up the whole of the vagina?" Besides the cases of complete congenital atresia, or acquired during pregnancy, there are cases, almost identical, which cannot be traced to either accident or disease. The vagina is almost closed, leaving only an exceedingly small opening through which menstrual fluid can escape, and pregnancy has occurred, thus proving that a communication with the uterus existed. The most careful examination, however, had failed to detect the minutest opening.

In that class of cases he included one reported by Dr. Pallen in *St. Louis Med. Journal*, 1870. Reference was also made to several other cases. He did not accept the opinion that a vicarious discharge or transsudation of menstrual fluid occurs through the dense fibrous structure, or through the anus or bladder. There is a great difficulty in finding the minute orifice in these cases, as in cases of labio-rectal fistula consequent on abscess of Bartholin's gland. It is sometimes so small as to admit only the smallest silver probe, and is recognized only with the greatest difficulty. For these cases Dr. Taylor recommended operative procedure, which consists in tearing the tissues, and which he performed first in 1866 in the pregnant, and in 1867 in the non-pregnant. He then reproduced his cases as recorded in the minutes of the New York Medical Journal Association. They were treated by the tearing process and injections. Another operation was completed at a single sitting. Dr. Emmet has published, in the *Louisville Medical Journal* for August, 1866, a few months previous to Dr. Taylor's cases, three cases in which the opening was made by the tearing process. Of those reports Dr. Taylor was not aware when he treated his cases. Amussat's case was published in 1835, *Gazette Médicale*, and operated on in 1832.

The tearing process was adopted. On Feb. 22d, 1847, M. Debrou treated a case in the same manner, and published it in the *Gazette Médicale*, in March, 1851. Debrou, however, was anticipated by Simmons in this country, who operated in Nov., 1846.

In speaking of the operation and the subsequent treatment, Dr. Taylor asked the following questions:

First, "What channel is the best for the operation, the rectum or the vagina?"

Second, "By what means shall the opening be effected?"

Third, "When shall uterine injections be resorted to?"

Fourth, "Is marriage to be sanctioned?"

He then referred to the treatment by puncture through the rectum as practised by Oldham, the operation through the vagina as practised during the last quarter of a century by Syme, Key, Brodie, and others. Then arose a discussion as to how the opening should be made, by the knife, trocar, scissors, or tearing process. If the obstruction is epithelial or connective tissue, the tearing or lacerating process by means of the finger or some instrument will succeed. If the structure is dense, recourse must be had to the knife, trocar, or scissors. Dr. Taylor preferred to operate when the uterus is quiescent, and pressure upon the tumor to evacuate the fluid should be avoided. forcible injections of the uterus with warm water should also be avoided, for they were liable to do damage.

With reference to the question of marriage after such an operation, he was of the opinion that it was permissible. Of the nine cases collected in which the tearing or lacerating process was resorted to, uterine injections used, and the operation completed at one sitting, there were seven in the non-pregnant and two in the pregnant woman. He believed that the congenital cases could be successfully treated by the tearing process: that the accidental would require other surgical means. Exceptional cases, in either instance, might occur. In the nine cases collected, six were congenital, and three accidental. Of the six congenital cases, five were in the non-pregnant and one in the pregnant woman. In the three accidental cases, two were in the non-pregnant and one in the pregnant woman, and in all the scalpel was resorted to with occasional tearings. In cases in which the atresia exists in the pregnant, he believes it to be safer to defer the operation until labor begins than to operate earlier. He disapproves entirely of the rectal operation in either class of cases.

MEASUREMENTS OF THE UTERINE CAVITY IN CHILDBED

was the title of a paper then read by DR. A. D. SINCLAIR, of Boston. It contained an analysis of 108 cases and was mostly statistical. The average length of the uterine cavity in the 108 cases was 3.02 inches. The average length of the uterine cavity in 75 primiparæ was 2.94 inches. The average length of the uterine cavity in the 33 multiparæ was 3.21 inches.

The facts in the paper being incontrovertible and not admitting of discussion, the Society adjourned to meet on Friday morning, at 11:30 o'clock.

Friday, September 19th—Third Day—Morning Session.

The Society was called to order at 10.30 A.M. by the President.

THE EARLY APPLICATION OF FORCEPS IN THE FIRST STAGE OF
NATURAL LABOR.

DR. ISAAC E. TAYLOR, of New York, read an interesting and suggestive paper upon the above subject, of which the following is a brief abstract.

He used the term "natural labor" because it is to be distinguished from lingering or protracted labor, a distinction not sufficiently recognized. In natural labor the soft structures yield kindly and without injury; while in tedious and prolonged labor they become irritable, congested, and edematous, and there is imminent danger of injury being produced. Natural labor is a physiological act, and we are to aid nature before unfavorable symptoms arise. He used the word "early," and made no reference to the frequency of the application of the forceps in the first stage of labor. With reference, however, to the frequency of the use of the instrument in the second stage, he thought it had been too great within the last few years. The principle, however correct it may be, should not suffer from abuse. Interference in the process of labor when it is going on well, is unjust and reprehensible. He, however, disapproved of the remarks of Naegele, that "removal of the difficulties must render the woman liable to disease, either immediate or at some remote period." The condition which demands assistance has been graphically described by Ramsbotham; "if the pains are subsiding gradually, or have entirely disappeared: if the strength be failing, the spirits sinking, the head arrested for four hours" (presumably in the pelvis); Collins has stated that "so long as the head advances ever so slowly, etc., interference should not be attempted till the child is dead; Schroeder maintains that, in minor disproportions of the pelvis, "although the head is fixed and is retained for a long time, while the dilatation of the os continues, no active interference is required unless the state of the mother demands it, and that then the forceps are of no avail, and nothing remains but to let the child die." But all these views which relate to the second stage of labor Dr. Taylor regarded as extravagant fears of the mischief arising from the use of the forceps, and he thought that no intelligent practitioner of the present day would yield to such doctrines. The *first* stage of labor has been ignored in their making up, and the view entertained that no harm follows a continuance of the first stage even for sixty or one hundred and twenty hours, so long as the membranes are entire and the liquor amnii has not escaped. Dr. Taylor, however, asked the significant question, "Are the structures of the powerful and hard-taxed uterus, body and cervix, of no value? Is the pressure of the child's head in the lower part of the body of the uterus, or the superior part of the cervix, when the head is capped by the cervix itself, the pains active and steady, and no advance made for some hours, of no moment? When is Nature to cease pegging away?"

The practice which Dr. Taylor has followed in such cases nearly eighteen years, not only in private and consultation, but in his Bellevue and Charity Hospital practice, is the following: Of the first two stages of labor, the first is the most vexatious and depressing, if the os uteri does not relax, or the head of the child does not adapt itself properly to the os, membranes ruptured or unruptured, and the cry is heard, "How long is this suffering to last?" Perhaps the os is not open more than one or one and a half inches. The pulse is not quickened, and there are no other unfavorable symptoms; but the labor does not progress. Under such circumstances he indorses the belief that there is no more baneful, false, and erroneous view brought into the lying-in chamber than "the ban of time." His proposition was to resort to the forceps and abbreviate the first stage, the same as he would abbreviate a prolonged second stage of labor, and he had never seen any bad results follow the application of the forceps when the os uteri was dilated only to the size of seven-eighths of an inch in diameter. He regarded it as a gratuitous statement that the danger in forceps delivery is exactly in proportion to the smallness of the os at the time the operation is performed, unless it has some pathological condition, and, even then, it may not be sufficient to postpone or prevent the use of the instrument.

He, therefore, introduces his *thin narrow-bladed* forceps (the ordinary forceps being too wide to pass through an opening having so small a diameter), and brings the head of the child properly in contact with the *undilated cervix and lower part of the body of the uterus*, without using any forcible traction whatever. The obstruction is at the upper part of the cervix, where the head is covered by the expanded cervix at the brim or even in the cavity of the pelvis. The os may be dilatable or not, but Nature cannot overcome the difficulty above it in the cervix, unless aided; and she sometimes seeks relief by rupture of the uterus at that point.

That class of cases cannot be safely delivered within ten or thirty minutes, but many of them had claimed his careful attention from one to two hours. In many, when the os uteri was the sole and only difficulty, the labor had been completed as easily as though the head of the child had been at the inferior strait. The *object* of the forceps is to simply *retain* the head of the child in contact with the os uteri *during* and *after* a pain, and in some cases to aid in flexing the head, so that the occiput may become the *natural dilator* of the cervix. The forceps stimulate the uterus to more perfect action, particularly if chloroform is *withheld*, when a slightly stronger traction is required. After a while, if the os uteri is found to be more dilated, the forceps are removed at the *commencement* of a pain, and the head sometimes effects the dilatation sufficiently to escape through the os, and then the labor progresses naturally. He seldom continues traction, which should always be gentle and cautious, more than fifteen or twenty minutes, as the head is *retained* in the same position after a pain. Should the os and cervix then be not suffi-

ciently expanded, he removes the forceps and reapplies them at the end of a few minutes. In that way the instrument may be applied three or four times, before sufficient dilatation is effected. After the head has passed through the cervix, the case may be terminated naturally or instrumentally, according to circumstances.

In the *first stage* of labor the forceps acts as another dilating force, coming from within; while, when the child is delivered through the vulva, the opposite may be true, the instrument acting in the same manner as the bag of waters. It is what Dr. Taylor calls the *relay* management, which he pursues in every case of difficult labor, and there is no occasion for dragging or pulling the head of the child through the os uteri. It should not be forgotten to caution the inexperienced in the management of these cases, not to resort to the forceps unless they have had some practical experience in their use in the second stage of labor. It is equally important to know when to cease traction.

The "*novelty*" of the proposition has passed away; the "*revolutionary*" change had taken place, and the "*innovation*" has existed since 1863, although Dr. Johnston, without giving due credit to its originator, has stated in his clinical report ending Nov., 1874, "that having adopted this method, now for the last *three years*, etc., we have delivered one hundred and thirteen such cases, and we are more and more convinced every day of its great advantage in saving the lives of both mother and child." In experienced hands the operation, if carefully and properly performed, is a safe procedure; and illustrates the "*scientific frontie*." With reference to the frequency of the use of the forceps in the first and second stages of labor, he believes that time would demonstrate that the average rate should be one in thirty or thirty-five cases, and not as formerly one to three hundred or five hundred cases. Every obstetrician should know *why*, *when*, and *how* to interfere in the parturient process.

The discussion was opened by DR. WHITE, of Buffalo, who remarked that, as soon as the mouth of the uterus is dilatable and the symptoms indicate the use of instruments, the forceps should be applied. For more than thirty years he had been an advocate of the early use of the forceps, in the general acceptance of the term. The skilled use of properly constructed forceps promotes the safety of the perineum. Humanity demands their early use, and they are a saving to the strength of the woman.

DR. W. T. HOWARD, of Baltimore, remarked that for several years his practice regarding the use of the forceps, for example in cases of urgency, as in convulsions, had been the following: Placing the woman in the lithotomy position, he injected warm water against the cervix for a half hour, or until it became somewhat dilatable. He then employed Barnes' dilators, and when the cervix was sufficiently dilated, introduced the forceps and completed the delivery of the child. As a general rule, no laceration of the cervix occurred. It is important, however, to bear one thing in mind, and that is, that when a woman is suffering

from puerperal convulsions, especially primiparæ, the cervix is more frangible than dilatable.

DR. THADDEUS A. REAMY, of Cincinnati, continued the discussion, expressing a doubt regarding the propriety of using the forceps in the first stage of natural labor, unless it became complicated. If Dr. Taylor with his keen vision could see that difficulties were coming, which would change a first stage of natural labor into an unnatural labor, and could by the proposed manipulation avoid such complication, he consented to the doctrine, but it should not be recommended as a general practice.

The discussion was closed by Dr. Taylor.

DR. WILLIAM GOODELL, of Philadelphia, then read a paper entitled

CLINICAL NOTES ON THE ELONGATIONS OF THE CERVIX UTERI.

In this paper, the author gave his views with regard to the etiology and pathology of the two forms of prolapsus of the womb, viz., the elongation of the supravaginal portion of the cervix, and that of its infravaginal portion. The former he regarded as due to the traction of a prolapsing bladder and vagina upon a womb made ductile either by subinvolution or by chronic congestion. The weight of these organs lengthened out and thinned out that portion of the womb, the supravaginal portion of the cervix, which lies between its vesico-vaginal attachment below, and its suspensory ligaments above. He believed that that form of elongation was not congenital, but acquired, being usually found in child-bearing women, whose perineum and cervix have been torn. The author had, however, seen it once in a sterile married woman, and twice in virgins who had passed the climacteric. It occurs also far more frequently in hard-working women, and especially in those—such as cooks, nurses, and laundresses—who stand much on their feet and lift heavy weights at arm's length, that is, at a great disadvantage and with much straining.

In view of the very unsatisfactory results from the usual operative treatment of that very frequent form of prolapse, the author gave the history of twelve of his cases, these being the only ones of which he could keep track for any length of time. Each one had the vaginal portion of the cervix cut off, either by the cold wire or by the hot wire, and in each one the vulvo-vaginal outlet was narrowed by the operation of colpo-perineorrhaphy. The wire was used, and not the knife or the scissors, because, in the author's opinion, some suppurative action was needed to bring on retrogressive metamorphosis in the redundant portion of the cervix. The results were as follows:

Three women, since the operation, had been under observation for from five to six years, and had remained cured. Four women had thus far kept well for from two and a half to four years. Three women had not, up to the present time, exhibited the slightest symptoms of relapse, for six months, for one year, and for one year and a half respectively.

One woman, after staying well for four years following the operation, became pregnant and gave birth to a living child. Her perineum was again torn, and the bladder and vagina were beginning again to prolapse. One woman was cured of the cervical prolapse, but not of her cystocele or of her rectocele.

In the amputation of the cervix, the author preferred the cold wire to the hot one, because the danger from secondary hemorrhage was much less, and because the surrounding mucosa could be slid over and stitched to the stump, to which it would unite by granulations, and thus lessen the area of cicatricial contraction. With regard, however, to the alleged contraction of the os, resulting from the use of the hot or the cold wire, he deemed its liability very much overrated. In not one of his cases was it found to be present to any pathological extent. One of them, indeed, became pregnant, and gave birth to a living child, while none of the others had complained of dysmenorrhea, or had needed any special local treatment.

In but one of his cases was a special operation needed for the cystocele. With this single exception, the prolapsed bladder was invariably pulled up by the permanent shrinkage of the womb, and pushed up by the pressure of the reconstructed perineum and posterior vaginal wall. This operation of colpo-perineorrhaphy also obliterated the rectocele, for by it the redundant vaginal tissue of the rectal pouch was denuded and used up in forming the back wall of the new perineum.

Elongation of the infravaginal portion of the cervix the author deemed either a congenital affection or an exaggeration of a congenital affection. So far from its being acquired, he had very rarely met with it in child-bearing women. In them, the cervix usually takes on growth in every direction by circular hypertrophy. True longitudinal hypertrophy he considered as essentially an affection of virgins or of sterile women. Of this variety, he has seen seven cases in which the cervix either appeared at the vulva or protruded from it. Under the form of conical cervix, it was, however, very frequently met with, but the elongation is then limited.

With regard to the indications for the treatment of this elongation there can be no question. Since suppurative action was not needed, the redundant portion ought to be cut off by a sharp instrument, and not by the cold or the hot wire. The surrounding mucosa was then sewed to the mucosa of the os uteri by radiating stitches, which will prevent cicatricial contraction. These stitches will also firmly compress any open-mouthed vessel, and the union of the two mucous membranes will greatly shorten the healing process.

DR. J. C. REEVE, of Dayton, O., opened the discussion by remarking that there were two points to which he wished to call attention :

1. The paper presented cases from actual practice upon a subject concerning which there is a great diversity of opinion.

2. If he correctly understood the subject, it is the prevailing

doctrine that all the evil effects which follow laceration of the cervix are mechanical. To that doctrine, however, he does not subscribe, but believes that the evil results are due to such conditions as subinvolution, and others produced by the injury to the cervix. To the preparatory treatment required he was inclined to give the credit of cure fully as much as to the surgical operation.

DR. ALEXANDER DUNLAP, of Springfield, O., remarked that he had never met with a case of supravaginal elongation of the cervix. He had met with cases in which there was infravaginal elongation of the cervix, and in one the projection was nearly two and a half inches, produced sterility, and had very much the feel and appearance of the male organ. In that case he gave directions regarding sexual congress, so that the semen might be brought in direct contact with the mouth of the elongated cervix. Pregnancy occurred, and the woman subsequently bore children without hindrance. He would not, therefore, recommend amputation in all cases, certainly not in married women.

DR. A. J. C. SKENE, of Brooklyn, remarked with regard to treatment that he had followed that recommended by Dr. J. Marion Sims, and that he was fully satisfied with the results obtained. He was confident, so far as his own experience went, that Dr. Reeve was perfectly right regarding mechanical irritation. He did not believe that the good result depended entirely upon the suppuration that followed the operation, for oftentimes the hypertrophy rapidly disappeared when only a very small portion had been removed, and there was only a trifling amount of suppuration.

The discussion was continued by Dr. Isaac E. Taylor, of New York, and closed by Dr. Goodell.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY AS RELATED TO INSANITY IN WOMEN.

DR. A. J. C. SKENE, of Brooklyn, presented an interesting paper on the above subject, which would have been read had time permitted. The following is an abstract:

In it he gave the results of his observations in gynecological practice in the Brooklyn Insane Asylum. He there met with an entirely new phase of practice, in which the ordinary methods of investigation were of little value. No correct histories could be obtained from the patients themselves, and the records kept by the physicians in charge afforded but little information to the gynecologist. Searches for information regarding gynecological practice among the insane were made in records, but without avail, and he was obliged to devise a method of examining patients.

The system of investigation adopted, and the phenomena observed, together with the deductions drawn from them, formed the subject-matter of his paper, and Dr. Skene restricted his discussion of the subject to the relations which gynecology bears to insanity.

From his investigations he had been led to the belief that, up to the present time, the effects of disease of the sexual organs in

women, causing and keeping up insanity, have been more correctly studied than the influence which insanity exercises upon the sexual organs. The reasons for holding that belief are, that the one line of investigation is more easily made than the other, and our literature shows that most investigators have chosen the sexual organs as the starting-point of their inquiries.

With reference to the way in which diseases of the sexual organs cause insanity, the rule has been to attribute insanity (when developed during the existence of uterine or ovarian disease) to reflex action. No doubt that is an important factor in the cause of mental derangement, but it is far from covering the whole ground. There are many cases of insanity which can be traced to the sexual organs, but in which reflex action takes no part.

One of the most marked and important causes of insanity among women is clearly traceable to frequent child-bearing and lactation among the poorer classes. That he had proved by clinical observation and a perusal of the records of all the asylums in this country.

There is too little in our literature on the subject of mania caused by the exhaustion of the nervous system from child-bearing and nursing. Our books tell us of anemia from prolonged lactation, but say little of the nervous exhaustion which may or may not accompany the anemia. It may be questioned if even physicians, at all times, fully appreciate the demands made upon the female organization by reproduction. From cases occurring in his own practice he is satisfied that, occasionally, the normal functional activity of the reproductive organs tends to undermine the brain and nervous system to an extent sufficient to lead to insanity.

He is satisfied, also, that the prevailing opinion that insanity, as the result of reflex action, occurs very frequently at puberty and the menopause is not always true. The point which the author of the paper made was, that a clear distinction should be drawn etiologically between the insanity caused by existing active disease of the sexual organs, and insanity arising from brain exhaustion produced by prolonged or excessive functional activity of those organs while free from disease; and he inclined to the opinion that as many, or even more, cases can be traced to the latter as to the former.

The next question discussed was, the effect of insanity upon the function of the reproductive system. Observations had been made on 200 women, ranging from seventeen to forty-six years, the period of active functional life of the sexual organs.

In the greater number of cases there was amenorrhea, due, doubtless, to deranged innervation. A number who came under his care menstruated regularly, and some of them had menorrhagia. According to the rule that insanity tends to suspend the menstrual function, all the insane should have amenorrhea; but they did not, and then, why not? The answer is, that menstruation is effected in proportion to the degree of insanity.

Formulated, his deductions were as follows: Well-developed

insanity, with impaired general nutrition, causes suppression of the functions of the sexual organs.

Deranged innervation tends to produce the same result.

In mild forms of insanity, menstruation may continue normal.

Excessive menstruation among the insane is usually caused by uterine disease, and should be accepted as evidence of such.

The next question was, "*What effect does insanity exert upon diseases of the sexual organs?*"

First, Of the functional diseases depending upon impaired innervation and blood circulation. To use a popular but unscientific expression, insanity tends to cure functional diseases of the uterus. Clinical observation compels that conclusion, and renders it worthy of the highest consideration. The same action has been observed in the pathology of other diseases. But the influence of insanity in arresting the progress of uterine disease relates almost exclusively to functional disorders, and does not apply to other forms of local disease of an organic character. The class of insane women who have simply functional diseases of the sexual organs requires no care from the gynecologist, beyond what is necessary to establish the fact that there exists no organic disease. When the diagnosis is settled in the negative, the patient should be left to the treatment of the psychologist. The importance, however, of clearly distinguishing disease of the sexual organs that causes and tends to keep up insanity, and mental derangements which exist independently of lesion of other organs, can hardly be overestimated.

Second, Organic diseases of the sexual organs exercise a most important influence in causing insanity, and tend to retard recovery from it. Under that head are included all the appreciable diseases of the ovaries, uterus, and vagina that are characterized by change of structure or position. It is to that class of genital affections among the insane that the science and the art of gynecology apply with most marked advantage, and the relief that can be afforded is, certainly, very much.

"*What are the ascertained effects, upon the insane, of curative treatment, regarding co-existing diseases of the sexual organs?*"

A careful consideration of that subject has led to the conclusion, that acute affections of the brain and nervous system, wholly due originally to disease of the sexual organs, will be relieved, in a large majority of cases, by curing the primary affections; and insane women, having diseases of the sexual organs, will be improved in their general condition by restoring the sexual organs to health. The effects of treatment will be in proportion to the duration and the severity of the mental derangement.

Attention was next invited to the subject of diagnosing diseases among the insane.

Dr. Skene then spoke of the difficulty experienced in obtaining the clinical information which is of value to the gynecologist. Physical exploration of the pelvic organs of insane women has heretofore been beset with many difficulties. Practically, the use of

ether as an anesthetic has proved very unsatisfactory. To overcome all these difficulties he uses nitrous oxide gas, and it has answered the purpose most admirably. The mode of administering it is with the apparatus used by the dental surgeons, using a rubber cup which fits over the mouth and nose instead of the mouth-piece. The physical signs of disease vary but little from those found in ordinary cases, with a few exceptions, as follows:

The absence of tenderness is almost always marked.

When the mental derangement has existed for several months, or longer, and the menses have been absent, the vagina and cervix are found to be pale and anemic, resembling the appearance seen after the menopause.

The rectum is, as a rule, found distended.

The diagnosis of ovarian disease is especially difficult among the insane. The valuable sign of tenderness on pressure is lost.

The diseases which occur among the insane are not peculiar or worthy of special notice, and their physical signs are the same. It is possible that malignant disease of the uterus occurs more frequently among the insane than among the sane, and there are also reasons for believing that the products of former diseases, such as pelvic peritonitis and cellulitis, are found more frequently among this class of patients than among sane women.

The treatment of diseases of the reproductive organs among insane women is based upon the general principles which guide us in ordinary practice.

The frequent repetition of local treatment, such as electricity, leeching and blistering the uterus, hot-water douches, etc., cannot be resorted to among the insane as among the sane women, and modifications in treatment must be made accordingly. In treating ruptured perineum, he has resorted to the use of silk sutures and the marine-lint tampon in place of the douche, and fair results have been obtained, although the patients walked about during the healing process.

The most important difficulty is encountered in the management of displacements among those having imperfect perineum.

DR. J. TABER JOHNSON, of Washington, D. C., then read a paper on

MISMANAGED LABOR THE SOURCE OF MUCH GYNECOLOGICAL PRACTICE.

He referred to the wonderful achievements and rapid growth of gynecology. Diseases are now completely relieved which a generation ago were considered incurable. The diseases of women have greatly multiplied, until it is nearly as difficult in this day to find a perfectly healthy woman as it was for Diogenes, in his age, aided by his lantern, to find a perfectly honest man. The doctor thought that there is a tendency in the minds of the profession to the study of gynecology to the neglect of the more important department of obstetrics, and illustrated his statement by referring to the fact that, of the seventy-one papers in the three

volumes of the Society's transactions, only sixteen of them related to obstetrics, and that of the sixty-one articles and discussions in the July numbers of the American and British Obstetrical Journals only twenty were devoted to obstetrical subjects. He referred to midwifery as the more important branch, "because, while in the former (gynecology) we render our patients much more comfortable, and at times prolong life: in the latter (midwifery), by our operations and skill we not only save maternal and fetal life at the same time, but prevent the necessity of our patients calling upon the gynecologist in the future at all, by preventing the occurrence of those conditions requiring their aid."

The object of the paper was stated to be, to draw attention to the fact that gynecology derives much of its prominence and importance from the mismanagement of obstetrical cases and faulty treatment during the puerperal month. There is a growing tendency among general practitioners in the direction of assuming the responsibility of severe obstetrical operations and treatment without skilled counsel, which is not apparent in the field of gynecology. If the experienced accoucheur is not always able to avert danger, damage, or death, how much less can those who only occasionally attend cases of confinement, and are not acquainted with recent obstetrical text-books and literature.

A lengthy reference was made to the faulty management of abortion and its subsequent treatment, in allowing the placenta and secundines to remain undelivered in cases requiring manipulation for their removal. The disinfection of the uterus was insisted upon in cases of putrid discharge by the injection of antiseptic fluids. Priestley and Playfair of London, and Dr. Thomas and others in this country, were quoted as favoring the redilatation of the cervix, if required, and the removal of the retained after-birth and membranes. Septicemia is thus prevented, and the many cases of sub-involution, fibroid tumor, obscure hemorrhages, and uterine displacements, which gynecologists are constantly treating, would thereby be warded off.

Dr. Lusk's paper upon the faulty management of abortion was referred to, in which he makes the following statement: "While our young men are all desirous to make a specialty of the diseases of women, it is hard to obtain a hearing for the statement of the very trite fact, that it is *faulty midwifery* which gives to gynecology nearly all its importance." Two or three rash and unskilful physicians in a city, who by some means have acquired a large obstetric practice, have been known to keep a gynecologist busy in treating diseases and repairing damages which greater obstetric skill might have prevented altogether or greatly lessened in severity. The various fistulæ, cervical and perineal lacerations, pelvic cellulitis, etc., were instanced as examples of conditions arising from a failure to use forceps in time to prevent their occurrence. The failure to properly remove putrid matters from the vagina and uterus was dwelt upon, and the prejudice against the use of antiseptic vaginal and uterine injections argued against; and cases cited of injury from their retention and benefit from their removal, followed by the use of injections.

The early rupture of the amniotic sac was referred to as a cause of prolonged dry labor, and the cervix being provoked into a state of rigidity by too much manipulation.

The practice of administering ergot during labor was spoken of as cause of still-birth, and subsequent damage to the uterus, producing conditions which require the aid of the gynecologist to relieve.

The mode of delivering the placenta by pulling upon the cord, and intrauterine use of the hand were instanced as causes of disease which require treatment months after the attending physician has ceased his visits.

Too early resumption of the erect position and the usual avocations was cited as productive of many of the hyperplasias, hypertrophies, subinvolutions, displacements, chronic metritis, cystitis, and cellulitis, which pass so often from the care of one physician to another, until they finally fall into the hands of a skilled gynecologist who recognizes the primal cause of these protean maladies and relieves it.

The forceps were extolled as the most valuable instrument in the possession of the faculty, capable of saving more life and averting more danger than any other one instrument. Its bungling use, however, by inexperienced hands was presented as the cause of some of the occupation of gynecologists. The recent discussion in the London Obstetrical Society was noticed, and the fourth proposition of Barnes acceded to, viz., "that in proportion as the head is arrested high in the pelvis, in the brim or above the brim, the necessity, the utility, and the safety of the forceps becomes less apparent, and that increasing caution in determining on the use of the forceps and greater skill in carrying out the operation are called for." Dr. Roper made the point in this discussion that the forceps are used too frequently in general practice by those not possessing the requisite skill, and are not actually required. "He could not help thinking that much of the gynecological work of the present day results from this frequent interference with the natural functions of the uterus in child-birth." Rupture of the vascular cervix and fatal hemorrhage had been produced by the hasty, unwise, unskilful, and unnecessary turning operations performed in cases of placenta previa, a less vigorous, rapid, and forcible course of procedure in these dangerous cases when seen while labor is in actual progress; and by the gentle induction of premature labor in cases clearly diagnosed, after the viability of the child would not only lessen the frightful mortality in these cases, but deprive the gynecologist of the labor of repairing the damages of the attending physician. The damage done by bad instruments in inexperienced hands was discussed in referring to the forceps operation, version, and craniotomy, done in a contracted pelvis. The doctor declared that a patient was entitled, while undergoing the agony and enduring the exhaustion of lingering or difficult labor, to the best of skill and the most improved instruments, and that the physician who attempts the performance of the capital operations in obstetrics without

these necessary factors of success, when these are within his reach, assumes a very grave responsibility.

The paper closed with an appeal for a greater study of obstetrics and its clinical teaching in our colleges in the future, as the best means of preventing many of the conditions which we have to treat in gynecology.

The Society then adjourned to meet at 3 P.M.

Third Day—Afternoon Session.

The Society was called to order at 3 P.M. by the President.

The first paper was read by DR. J. C. REEVE, of Dayton, Ohio, and consisted of a

REPORT OF A CASE OF EXTRAUTERINE PREGNANCY.—TREATMENT BY THE USE OF ELECTRICITY.

The case was treated successfully by the use of electricity, beginning at what was presumably the end of the third month of pregnancy. It was applied daily, from the 28th of March until the 5th of April. On the 15th of April the patient was decidedly better. On the 11th of May there was a marked change in the condition and appearance of the breasts—more flaccid. June 4th: the tumor was much higher than formerly; oblique diameter decreased two-thirds; menstruation repeated. August 1st, sound introduced, and uterus found to be of normal depth.

The subject of extrauterine pregnancy was then discussed by Drs. Wilson, Howard, Reamy, White, Mundé, Battey, and the President.

A NEW METHOD OF PERFORMING DECAPITATION,

was the title of a paper presented by DR. W. L. RICHARDSON, of Boston, but not read for want of time.

The object of the paper was to show: *first*, that in all cases in which there is no hope of saving the life of the child, the condition of the mother is such as to necessitate operative interference; the child cannot be delivered easily, either by the forceps or version, and if the neck of the child can be reached, the operation of decapitation is indicated. *Second*, this operation is then best performed by means of the decollator of Carl Braun, and the decapitating knife of Ramsbotham; the former being used to break the vertebral column, and the latter to divide the soft cervical tissues.

KOLPOECPETASIS VERSUS KOLPOKLEISIS AS ILLUSTRATED IN A CASE OF ATRESIA OF THE VAGINA WITH RECTO-UTERO-VAGINAL FISTULE

was the title of a paper presented by DR. NATHAN BOZEMAN, of New York, which would have been read had the time permitted. The following is an abstract: He used the word kolpoecpetasis (to stretch the vagina) in contradistinction to the word kolpokleisis (to close the vagina). The case reported illustrated the meaning

of both terms and had the following history: Mrs. S. A., aged 29, widow, well-formed and in apparently good health, consulted him in August, 1871, with reference to a fistulous communication between the rectum and vagina, which, as she stated, had existed about thirteen years. Dec. 10th, 1858, she was, at the age of sixteen, delivered naturally of a large and well-developed still-born child, after a labor lasting sixty hours. About two weeks afterwards, feces and flatus began to pass from the vagina, and that condition of affairs continued. With her second husband she sought advice at the hands of many of the eminent surgeons in Europe, and finally, abandoning all hope of obtaining relief, she came to the United States. During the first six years after her second marriage, she had five early abortions and one miscarriage at seven months. In the latter instance the child was delivered with forceps, and the result was a urethro-vaginal fistula near the neck of the bladder. At the hands of an eminent surgeon she subsequently underwent an operation for the urethro-vaginal fistula, and it was completely cured. An operation for the cure of the fecal fistule soon followed, but it was a complete failure. The operation consisted in attaching the anterior lip of the cervix uteri to the anterior border of the fistule; the result was, that a column of cicatricial tissue was formed which cut off from view the vaginal orifice of the fistule. The success of such an operation would have been "partial kolpokleisis," but the objection to the success was that it necessitated menstruation through the rectum and prevented procreation. For several years the woman remained in that condition, and during that interval small pelvic abscesses, situated to the left of the cervix uteri, occasionally formed and discharged into the vagina. After passing through the hands of a second surgeon who declined to operate, the patient came under the care of Dr. Bozeman, who operated *first* to remove the column of cicatricial tissue, and *second* to close the fistule.

The first operation was done as follows. By the aid of one assistant the patient was placed in the knee-chest position, anesthetized, and the column of cicatricial tissue, about the thickness of the little finger, was completely divided directly backwards. The after-treatment consisted in intra-vaginal dilatations and additional incisions, as the case seemed to demand. In that way the fecal fistule was brought fairly into view. About six weeks were consumed in completing the operation of kolpoecpetasis. The *second* operation was then performed, and at the end of one week the fistule was completely cured. Her third marriage occurred, pregnancy followed, and she was delivered without special difficulty, of a well-developed, but still-born child.

Dr. Bozeman remarked at some length on the case under the following heads: Rarity of the injury, the persistent efforts of the patient to get cured, the recorded opinions regarding the difficulties in the case, and the operations performed, the different forms of treatment employed, and the scientific bearings.

The following papers were read by title:

“The Relations of Symptoms to Versions and Flexions of the Uterus.” By Dr. E. Van de Warker, of Syracuse, N. Y.

“The Justo-Minor Pelvis, with the report of a case.” By Dr. W. T. Lusk, of N. Y.

“Chronic Inversion of the Uterus.” By Dr. W. H. Byford, of Chicago.

“The Analysis of Five Hundred Gynecological Cases.” By Dr. G. H. Bixby, of Boston.

“In Memoriam—Marmaduke B. Wright, M.D.” By Dr. T. Parvon, of Indianapolis.

The hour for adjournment having arrived, the President, Dr. T. G. Thomas, expressed his pleasure and gratification at the success of the meeting, and his thanks for the uniform courtesy extended to him by the Fellows.

He then took leave of the chair in favor of his successor, Dr. J. Marion Sims, of New York.

Dr. Sims took the chair, and, with a few appropriate words, accepted the Presidency of the Society.

On motion, made by Dr. H. P. C. Wilson, of Baltimore, the Society tendered to Dr. Thomas its thanks for the impartial manner with which he had presided over its deliberations.

Dr. Thomas made an appropriate response.

The President then declared the Society adjourned to meet on the *first* Wednesday in September, 1880, in the city of Cincinnati.

The following are the officers elected for the ensuing year:

President.—DR. J. MARION SIMS, of New York.

Vice-Presidents.—DR. ROBERT BATTEY, of Rome, Ga., and DR. W. T. HOWARD, of Baltimore, Md.

Council.—DRS. W. GOODELL, of Philadelphia; E. W. JENKS, of Chicago; A. D. SINCLAIR, of Boston, and A. J. C. SKENE, of Brooklyn.

Secretary.—DR. JAMES R. CHADWICK, of Boston.

Treasurer.—DR. PAUL F. MUNDÉ, of New York.

The following gentlemen were elected Fellows: Dr. John Scott, of San Francisco; Dr. Edward L. Duer, of Philadelphia; Dr. R. Stansbury Sutton, of Pittsburg, Pa., and Dr. J. W. Underhill, of Cincinnati, O.

The time for holding the next annual meeting was changed from the third to the *first* Wednesday in September.

REVIEWS.

LESSONS IN GYNECOLOGY, by WILLIAM GOODELL, A.M., M.D.,
 Prof. of Clin. Gynecology in the Univ. of Pennsylvania, etc.,
 etc., with eighty illustrations. Philadelphia: D. G. Brinton,
 1879, pp. 380.

This book is not a systematic treatise by the distinguished gynecologist of Philadelphia, but a collection of occasional lectures and papers, which by their eloquence, wit, and freshness of description have delighted and instructed so many hearers and readers during the past few years. Their collection in one volume under a shape readily accessible to all deserves the thanks of the profession.

In LESSON I. the author describes the *Gynecological Instruments* to be carried in the satchel, and the gynecological table used by him and attributed to Dr. M. D. Mann, late of New York, now of Hartford. Dr. T. G. Thomas is really the originator of the table, although it was modified by Dr. Mann, and again by Dr. Goodell. We use precisely the same article in our office and never wish to return to the chair. The longitudinal and lateral pitch furnished by this table are invaluable in examinations with Sims' speculum, and enable us, for any ordinary manipulation, to dispense with a nurse while using that instrument. An excellent rule mentioned by the author, and one we have for years practised and taught, is that, to accustom yourself to use the left hand for examinations, and to keep the right for the sound, applicator, or other manipulation. The right hand is thus also kept free and clean for obstetric work.

LESSON II. treats of the *Caruncle and other Affections of the Female Urethra*. The author prefers touching the base of the caruncle after its removal with the thermo-cautery, or a red-hot knitting needle, to the application of nitric acid or nitrate of silver, principally because secondary hemorrhage is less likely to occur, but partly also because strong caustics are liable to produce constriction of the canal. The useful practice of occasionally dilating the urethra after the removal of a caruncle, especially if there be vesical tenesmus, is recommended. Very good advice is given as regards the delicate question of making an ocular examination of the external genitals of a woman (be she timid or not), that is, to propose a specular or digital examination, and then quietly inspect the parts without previously consulting her. Once done, she will not object. "Always inspect the urethral opening whenever dysuria is complained of."

A very excellent chapter is that on the *Vesical Disorders of Women*, about which the text-books ordinarily say very little, and which are as common and distressing affections as any falling into the hands of the gynecologist. When a woman complains of

painful micturition, we should always find the cause, whether in the urethra or bladder (catheter, sound, pressure), or the uterus, or vagina, ante- or retro-displacement, descensus, cystocele, whether organic or functional, and the remedy is then readily apparent, although by no means always speedily successful. The author highly recommends belladonna as a stand-by in almost every case of vesical irritation. In chronic cystitis he frequently practises dilatation of the urethra, which he calls "empirical, though not entirely irrational treatment" in this disease, presupposing the existence of a fissure at the vesical neck; although this lesion is problematical, the dilatation certainly permits a free, painless escape of urine for a time, and is followed by great relief; often by a lasting cure. He admits the possibility of permanent incontinence following it, although he has never met with a case in his practice.

LESSONS IV. and V. on the *Fistulæ of the Female Genital Organs*, and *Closure of the Vulva for Incurable Vesico-Vaginal Fistula*; *Tumors of the Vulva*, contain nothing novel. We notice that Dr. Theophilus Parvin is credited with the first cure of a case of uretero-vaginal fistula in 1867.

On the Causes, the Prevention, and the Cure of Laceration of the Female Perineum is the title of LESSON VI. It contains some excellent hints on the support of the perineum (chiefly through forward pressure on the head by fingers in the rectum), and the prevention and causation of perineal rupture by the forceps. The author advises always to remove the forceps as soon as the head bulges the perineum, and leave the final delivery of the head to the expulsive efforts of the patient. We think that careful and judicious extension of the head by two fingers in the rectum, supporting the projecting vertex properly by the other hand to prevent its too rapid extrusion, will materially aid the final delivery. The sensible advice is given, always to inspect the perineum after labor, with index in rectum and thumb in vagina, and if a rent is discovered, unite it at once by sutures.

In LESSON VII. the *Secondary Operation for Laceration of the Female Perineum* is described in very much the ordinary manner. The author constipates the bowels for nine days in both primary and secondary operations, and removes all the sutures but the one first introduced, the rectal one, on the seventh or eighth day. Only after the bowels have been moved is this last suture removed. This is a very wise precaution. Whether it is not preferable, however, to keep the bowels moderately loose from the second day on, rather than trust to the possible separation of the newly united surfaces by the passage of the scybalous accumulations after nine days of constipation, under the care of a not always skilful nurse, is still a moot point. Instead of merely twisting the wires, the author uses perforated shot.

LESSON VIII., on the *Local and Constitutional Treatment of Chronic Metritis and Endometritis*, speaks of the various agents used for intrauterine applications (iodized chloral-phenol, carbolic acid, sol. arg. nit. 3 i. to glycerine 5 i., sat. sol. tr. iodine, sat.

ether. tr. iodine, fuming nitric acid, solid arg. nit.). All the fluid agents are applied on probes wrapped with cotton (the author very properly prefers *smooth* probes to those with roughened surface; we almost exclusively use a smooth hard-rubber probe, bent like a sound), and "always carries the probe to the fundus of the womb, whenever the internal os permits it to pass." This experience coincides with ours, that gently and cautiously practised intrauterine applications in a sufficiently patulous canal are very rarely followed by more than temporary reaction. His statement, that he has come to the conclusion that "he is the most successful gynecologist who is the most plucky," is safe enough to make to the experienced specialist, but of rather doubtful wisdom when made to a class of medical students. If it were qualified by the proviso, that only gynecologists *de professo* should treat gynecological cases, we should be much more inclined to accept it. The constant change from one agent to another (once a week) is advised. Nitric acid to a granular erosion of the cervix with gaping or everted os is recommended as the best treatment. The solid stick of arg. nit. is no favorite of the author's, and if it is passed to the fundus, the hypodermic morphine syringe should be within reach. A very excellent rule, which we have acted upon for years with success, is enjoined by the author, to give the patient a rest of a month or so after a certain number of intrauterine applications, say four to six, and thus afford nature a chance, and give an opportunity for conception. A number of excellent general remedies are given. We regret that we are not able to go more into the details of this chapter; to do so would necessitate its verbatim transcription.

We pass over LESSONS IX. and X. on *Retroversions and Retroflexions, and Anteversions and Anteflexions*, and proceed to LESSON XI. on *Dilatation of the Cervical Canal; Rapid Dilatation, Tents*. The author is a great advocate of forcible dilatation (with or without ether) by steel dilators (Atlee's, Wilson's, Ellinger's) in dysmenorrhea and sterility, and claims extraordinary results from the practice. We agree with him from our experience both as to the utility and safety of these dilatations, but differ from him in practising them for dysmenorrhea during the week following the flow, and for sterility a few days before the catamenia. In both cases we generally dilate several times during the intermenstrual period, the last time within the week preceding the flow, and have almost invariably relieved the dysmenorrhea; for sterility, we dilate also *immediately* after the cessation of the catamenia, and then recommend repeated intercourse during the next few days. We then wait for the next menstrual period before recommencing dilatation. As the author does not give us his results, we do not feel called upon to say more, than that in sterility the benefit by no means corresponds to that achieved in dysmenorrhea. This is in the nature of things and doubtless the experience of others.

LESSON XII. treats of *The Use of the Closed Lever Pessary, and of the Intrauterine Stem Pessary*, and gives a very lucid and correct description of the mechanism of the lever pessary and its

introduction. We prefer the left side position to that on the back for the introduction of the pessary, always replacing the uterus first. The author uses a stem pessary under certain restrictions: introduction at the house of the patient; stem always one-half inch shorter than uterine cavity; loop of thread through the button, to permit of its removal by the patient; only glass or hard-rubber stems, or Chambers' split rubber. He reports one case of impregnation while wearing the latter stem. He uses this same split stem also in cases of retroflexion, in which the body of the uterus is too tender to bear even an air-pessary. A Hodge pessary then lifts up the now *retroverted* organ.

In CHAPTER XIII., on *Different Kinds of Pessaries and Abdominal Supporters*, we will merely point out the recommendation of the author of large wads of oakum, as substitutes for supporters in bad cases of prolapse. We have for years used large tampons of cotton soaked in glycerole of tannin, introduced daily by the patients themselves, and retained by a T-bandage in these very cases, and found them excellent, especially in poor practice.

Prolapse of the Womb is very fully discussed in the thirty-two pages devoted to LESSONS XIV. and XV., and the old terms of "prolapse from hypertrophic elongation of the intravaginal portion of the cervix" . . . "of the supravaginal portion of the cervix," and simple descent, are thoroughly sifted; and the incorrectness of calling the two former by the name of *Prolapse* of the Uterus demonstrated. The author decides that the "conjunction of the theory of *traction* with that of *ductility*—traction from the prolapsing vagina and bladder, ductility from a chronic congestion of the womb, thus offers a very reasonable explanation of the phenomena of uterine elongation."

CHAPTER XVI., on *Laceration of the Cervix Uteri*, contains, perhaps, the most graphic description of this lesion, not excepting Emmet's initial papers, which we have seen. In it, the author's happy flow of language and accuracy of description, often quaint and original in their character, have found free vent. His percentage of the frequency of this lesion (one in six of all women suffering from uterine trouble) corresponds exactly with our figures (17 per cent) taken from 700 parous women.

In CHAPTER XVII., on *Uterine Cancer*, the author testifies to the excellent results of the sharp curette as a styptic, and confesses having even opened the peritoneal cavity with his fingers while scraping out a cancerous cervix, without evil consequences to the patient.

A most interesting and instructive chapter is that on *Vegetations of the Endometrium*, of which he recognizes and describes three varieties: 1. fungous degeneration; 2. villous degeneration, and 3, sarcomatous degeneration, of the uterine mucous membrane. The treatment is, of course, removal by the dull or sharp curette, subsequent application of tr. iodine, and other stronger caustics. We again pass over LESSONS XIX. on *Polypus of the Womb*, XX. and XXI. on *Fibroid Tumors of the Womb and their Treatment*, of which we need only say that they discuss the question from the

latest stand-point, and come to LESSON XXII. on *Spaying for Fibroid Tumors of the Womb, and for other Disorders of Menstrual Life*, of which the author has made a special study. Having himself had one of the most successful cases on record of spaying for fibroid of the uterus, he collected all the cases up to the period of his paper, fifty-one in number (fifteen of whom died), and inclines to the removal of the ovaries per vaginam, because of thirty-one cases of abdominal incision eleven died, while of twenty-seven cases of vaginal incision only four died. A very complete table is given of 132 cases of extirpation of both ovaries, in fifteen of whom regular monthly fluxes occurred after the operation, and in nine additional the fluxes were either irregular or lessened in amount. The possibility of an accessory ovary being left behind in these cases is pointed out.

The difficulty of diagnosis, and the errors made by very distinguished surgeons in supposed *ovarian cysts*, is described in LESSON XXIII., and the results, mostly unsuccessful, of the treatment of these cysts by tapping, injections of iodine, drainage, and electrolysis are referred to.

LESSON XXIV. treats of *Ovariectomy by Abdominal Section*, XXV. of *Vaginal Ovariectomy*, of which latter the author reports seven cases, 1 by Thomas (the first), 1 by Davis, 1 by Gilmore, 1 by Battey, 1 by Wing, 1 by Atlee, and 1, the 7th, by Goodell; all successful. Reference is made to the danger of tapping ovarian polycysts.

LESSON XXVI. treats of *Nerve-tire and Womb-Ills, or the Relation of Neurasthenia to Diseases of the Womb*, which latter title we much prefer as more euphonious and equally expressive. It was read at the meeting of the Am. Gynecol. Society in Philadelphia, in 1878, and describes chiefly Dr. Weir Mitchell's treatment of rest, massage, and diet in cases of general anemia and debility dependent on uterine disease. Several illustrative cases are reported.

The closing CHAPTERS, XXVII., XXVIII., and XXIX. really form the cream of the book, as they discuss questions on which the author has entirely peculiar views, and which require handling so delicate, that not every pen succeeds, as does the author's, in placing them before us in a graceful and pleasing form. In LESSON XXVII. the author speaks of *Practical Hints for the Prevention of Uterine Disorders* during Puerperal Convalescence, Society, Study, Dress, etc. The author refers to his practice of allowing puerperal women to sit up whenever they feel disposed after labor; he admits the obstetric binder for 24-36 hours as a comfort to the woman, but considers it unnecessary or injurious afterwards; he advises the use of the speculum if the lochia continue after the third week, and appropriate local treatment; the speedy union of a lacerated cervix or perineum; he cautions against the constant use of the sewing-machine, against the corset, too much study, etc., etc. A subject scarcely, if ever, referred to by writers is that discussed in LESSON XXVIII., on *The Relation which Faulty Closet Accommodations bear to the Diseases of Women*.

Every physician and most of the laity will understand the implied relation. We ourselves have during the past winter seen a case of pelvic cellulitis produced by exposure in a cold water-closet, on one of our coldest days, in a lady just recovering from her catamenia. Comfortable warm closets, or earth-closets, *private* and *accessible*, should be in every house, in city or country.

The last lesson is on the most delicate subject of all: *The Sexual Relations as Causes of Uterine Disorders; Conjugal Onanism and Kindred Diseases*. The evil influence of long engagements and of the excesses of the honeymoon-journey are spoken of in well-chosen words; and the practices, so common in this country, for preventing an increase of family are denounced in strong but measured terms. The injurious consequences of imperfectly-satisfied sexual impulses, of unduly hastened and retarded orgasm, of incomplete performance of the sexual act, the uterine and ovarian congestions and general nervous disturbances following these practices—all these topics are severally discussed by the author in his peculiarly attractive style. It is a pity that these last three chapters cannot be placed, properly modified, in the hands of the laity, where they would certainly be more productive of good than among the profession who know, though they may overlook, all these matters.

Although in part composed of lectures delivered to students, every practising physician may profit from this book, and should not fail to secure it. The typography is good, and the illustrations fair.

PAUL F. MUNDÉ.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.
VOL. XX., FOR THE YEAR 1878. With a list of Officers, Fellows, etc. London: Longmans, Green & Co., 1879; pp. lix., 411.

One can scarcely look through a volume of these transactions without pausing to admire certain features of the Obstetrical Society of London—that its fellowship is not narrowed down to London, weighty though it might be even if so hemmed in, but is made up of men from all quarters of the world; that its work is by no means the mere words spoken at its meeting, but that, by means of its library and its museum, it forms an ever ready resource for the student. No more can we avoid contrasting these features with those of our own societies, a number of small and select bodies, so strictly local as to be but little better than provincial, and a national body meeting once a year. We need not dwell upon such considerations, however, for the London society is well known to the physicians of America: we, therefore, pass at once to the contents of this particular volume.

The annual address by the President, Dr. Charles West, is a model of modesty, simplicity, and kindness. We learn from it that the task of deciding what papers are worthy of being read at the meetings it is proposed to throw upon a larger body of men than the president and secretaries, “so that the bare suspicion of personal feeling being mixed up in the question . . . shall be

impossible :” that a committee has made considerable progress in forming a collection of casts and drawings of distorted pelves, together with a few actual pelves: that the labors of the Transfusion Committee have been seriously hindered by the anti-vivisectionists; and that, largely through the efforts of the society, especially one member, Dr. Aveling, the General Medical Council, has drawn up a scheme “for securing that the women who practise as midwives among the poor shall be really competent to the duty which they undertake.” The address closes with some unusually tasteful sketches of members who died during the year.

The papers which make up the great bulk of the volume have for the most part been published, more or less *in extenso*, in the journals, so that, even if we had space enough for the purpose, an analytical notice of them all would be out of place.

In a *Report of the University Lying-In Hospital, Montreal, from October 1st, 1867, to October 1st, 1875*, by Dr. D. C. McCallum, we notice that, in rather fewer than a thousand confinements, the forceps was used nineteen times, and the perforator once; version was performed twice. Post-partum hemorrhage occurred in six cases. Besides the ordinary measures to prevent this accident (support to the uterus during the expulsion of the body, avoidance of haste in completely evacuating the organ, etc.), stress is laid upon the care with which adherent membranes are managed. After twisting them into a rope, the rope is followed up with the finger, and, if it is found that the rope does not reach well into the uterus, but that the membranes spread out in the vicinity of that organ, adhesion of the decidua vera to the decidua reflexa is diagnosticated. In that case the adherent membranes are carefully separated with the finger. There were seven cases of convulsions, and three of insanity.

Dr. J. M. Duncan contributes an article *On Traction by the Lower Jaw in Head-last Cases, a Laboratory Note*. This latter designation strikes us as rather unnecessary. He shows that traction by the lower jaw has little effect in producing flexion, but that, as an auxiliary in mere extraction, it is safer and more efficient than is generally supposed. Speaking of traction by the spinal column, he says, “The limits of this force are pretty well known, and do not permit the exertion of so much as is sometimes yet rarely required and justifiable if judiciously used,” which, we dare say, does not express his meaning.

Dr. A. L. Galabin gives *Two Cases of Rupture of the Vagina during Labor*. In one of them the placenta escaped into the peritoneal cavity, and came to lie in front of the uterus, from which locality it was removed by abdominal incision. In the other case both the fetus and the placenta escaped into the abdominal cavity. Laparotomy was forbidden by the patient and her friends, and extraction *per vias naturales* was performed, involving the use of the perforator on the after-coming head. The drift of the article is, to account for the occurrence of rupture of the vagina as due to anteversion of the uterus (pendulous abdomen), and to favor the resort to laparotomy.

Some Clinical Remarks on a Certain Class of Cases of Ante-flexion of the Uterus, with Certain Correlated Conditions, by Dr. George Roper, is a very suggestive, and in the main very satisfactory paper. He draws a sharp distinction between congenital and acquired flexions, calling the former antecurvature. Acquired ante-flexion he considers to be rare. He regards the dysmenorrhea of ante-flexion as wholly mechanical. As regards treatment, he prefers gradual expansion with metallic sounds or bougies. We especially commend his deprecation of stem pessaries and various cutting and stretching operations, but could not do so so decidedly, were we able to agree with him that the cause of the dysmenorrhea was purely mechanical. We are surprised at the statement that "it is self-evident . . . that the same treatment which cures dysmenorrhea also cures sterility." This, we think, is not the experience of those who have most indulged in slitting up the uterine canal. Should it turn out that those who make use of slow dilatation cure not only the dysmenorrhea, but, as a rule, the sterility also, some additional light would, in our opinion, be thrown upon the stenosis theory of dysmenorrhea—a theory which certainly needs overhauling. The discussion which followed the reading of this paper shows in a striking manner that much elementary work yet remains to be done before gynecology can compare with the other branches of medicine as regards settled principles.

Besides the articles already referred to, the volume contains the following: *A Case of Protracted Labor, in which the Use of the Forceps was Typically Indicated, Child stillborn*, by Dr. George Roper. *Two Cases of Repair of the Female Bladder and Urethra*, by Mr. Lawson Tait. *A Case of Rupture of the Uterus*, by Dr. J. Hickinbotham. *Case of Cesarean Section*, by Dr. J. Braxton Hicks. *Case of Pregnancy Complicated with Malignant Growths in the Vagina and Rectum*, by Dr. J. B. Potter. *On Membranous Dysmenorrhea*, by R. Cory, M.B. *A Description of the Conjoined Twins, Marie-Rosa Drouin*, by Dr. D. C. McCallum. *A Repositor for Inversion of the Uterus*, by Dr. J. H. Aveling. *The Curves of Midwifery Forceps, their Origin and Uses*, by Dr. J. H. Aveling. *The Revolutions of the Fetal Head in Passing through a Brim Contracted only in the Conjugate Diameter. Laboratory Note*, by Dr. J. M. Duncan. *On some of the Changes in the Uterus Resulting from Gestation, and on their Value in the Diagnosis of Parity*, by Dr. J. Williams. *Labor Complicated with an Ovarian Cyst*, by Mr. A. H. Brewer. *On the Treatment of Pregnancy Complicated with Cancerous Disease of the Genital Canal*, by Mr. G. E. Herman. *Case of Apparent Absence of Uterus*, by Mr. G. Mowat. Many of these papers are of great value. In addition, there are many reports of cases and specimens presented, with discussions.

The list of additions to the library during the year is very creditable, and it is particularly gratifying to observe that nearly all of them were by purchase. *Per contra*, the museum received only three casts and an instrument, all gifts.

So far as the looks of the volume are concerned, it closely resembles its predecessors, being well printed on good paper, but shabbily bound.

F. P. FOSTER.

HANDBUCH DER FRAUENKRANKHEITEN; TEXT-BOOK ON DISEASES OF WOMEN. By DR. BANDL, of Vienna: PROF. BILLROTH, of Vienna: PROF. BREISKY, of Prague; DR. CHROBAK, of Vienna; PROF. GUSSEROW, of Berlin; PROF. HILDEBRANDT, of Königsberg; PROF. MAYRHOFER, of Vienna: PROF. OLSHAUSEN, of Halle; PROF. B. SCHULTZE, of JENA: PROF. WINCKEL, of Dresden. Edited by PROF. THEODORE BILLROTH. Stuttgart: Ferdinand Enke, 1877-79.

So far there have appeared the following volumes, although not in regular order:

I. CHROBAK: Examination of the Female Genital Organs, with General Gynecological Therapeutics.

II. Part 1. MAYRHOFER: Defective Development and Inflammation of Uterus—Sterility.

IV. GUSSEROW: Neoplasms of the Uterus.

VI. OLSHAUSEN: Diseases of the Ovaries.

VII. BREISKY: Diseases of the Vagina.

VIII. HILDEBRANDT: Diseases of the External Genital Organs.

IX. WINCKEL: Diseases of the Female Urethra and Bladder.

The large collection of references following each chapter in these volumes renders them of great value to the writer and compiler, as well as to the practitioner.

We have been able to review in this number only the three volumes (Breisky, Hildebrandt, and Winckel) which appeared first. The remainder will follow in the January number.—ED.

VOL. VII. DIE KRANKHEITEN DER VAGINA von DR. A. BREISKY, o. ö. Prof. der Geburtshülfe und Gynäkologie in Prag.

THE DISEASES OF THE VAGINA, by PROF. A. BREISKY, of Prague. pp. 167.

The author treats of his subject in nine chapters (with thirty-two good woodcuts), of which the following is a short résumé:

Chapter I. *Anatomical and Physiological Introduction*.—Concerning the development of the vagina, our author is of the opinion of Thiersch and Leuckart, while he follows the views of Dohrn, in the description of that of the hymen. He differs in opinion concerning the muscular layers of the vagina from the generally adopted idea, and states that he and Prof. Eppinger found the inner layer transversely, and the outer one longitudinally arranged, and that he saw the same in preparations of Prof. Toldt. The question about the vaginal glands he does not consider settled, and thinks that the description of Von Preuschen requires further confirmation. Abnormal shortness of the vagina depends invariably upon reclinatio and sinking of the uterus, and we are of his opinion.

Chapter II. *Faulty Developments*.—The hymen imperforatus is

caused by a process of fusion of its folds touching each other. Deep-seated atresia vaginae may, by retention of abundant mucus, give rise to mechanical symptoms (author's two cases), but do so rarely before puberty. The dangers of operating for atresia are: 1st, injuries to neighboring organs (bladder, rectum, peritoneum); 2d, rupture of one or both Fallopian tubes, which may have been greatly dilated by accumulation of blood, and 3d, by septical infection. The first occur especially in opening broad atresia, the second and third may occur in any case. Rupture of the Fallopian tubes occurs when they are fastened by peritonitic adhesions; and therefore cannot follow the evacuated uterus in its descent. To operate through the bladder may give rise to cystitis and pyelonephritis.

Chapter III. *Acquired Atresia* are caused by loss of tissue and subsequent cicatricial contraction after prolonged pressure in labor (puerperal necrosis), by pessaries, and by escharotics. Case of Mme. Boivin: A woman injects sulph. acid into the vagina to produce abortion, in consequence of which the upper two-thirds of it become completely obliterated. During labor the vagina is ruptured, producing death. In cases like this the Cesarean section after Porro is suggested.

Chapter IV. *Displacements*.—Principal causes of descensus and prolapsus vaginae are labor and intra-abdominal pressure. The displacements may be primary, or may be produced by the dislocation of other organs. In connection with hernia vagin. ant., our author states (in a note) that the well-known case, clinically demonstrated by E. Martin, reproduced by Hüffel, Hegar, and Kaltenbach, and which is frequently used as an example of this displacement, was disproved by the post-mortem examination of Cohnheim, and in reality *did not exist*. The author has never seen hernia vagin. ant., and cannot understand it, excepting in connection with prolapsus uteri [precisely our opinion—REV.]. Prolapsus of the posterior wall of the vagina is not necessarily the result of rupture of the perineum; on the contrary, perineal rupture is more common *without* rectocele than prolapsus of the anterior wall without cystocele. As to the rare occurrence of hernia vagin. posterior, our author agrees with Hegar and Kaltenbach. Inversio vaginae is produced by prolapsus uteri, which is caused by the intra-abdominal pressure acting upon the reclining fundus uteri. Very rarely only do we find prolapsus vaginae as evident result of hypertrophy of the cervix. In another note, our author argues against a primary elongation of the collum uteri in cases of complete prolapsus of the vagina, and considers hypertrophy of the neck the result of stretching. The main points in the treatment of vaginal displacement are: 1st, to remove pressure by removing such tumors as may drag or push the uterus downward by their weight (in cases of hypertrophy of the neck Hegar's funnel-shaped excision is recommended); 2d, to narrow the vagina; and, 3d, to re-establish the fixation of the vaginal walls, by causing firm cicatrices. For the 2d and 3d purposes, kolporrhaphia and the kolpoperineoplastical operation of

Bischoff are recommended and fully described. Pessaries are only used as *palliative* means, for the support of the vaginal walls. Our author seems to prefer Mayer's rings, made of soft, black English rubber, and admits that in certain cases even *round balls of wax or hard rubber* may be used as *pessaries*. [The italics are ours.—REV.] In such cases in which pessaries as described do not answer the purpose, he confesses that he uses T-bandages, to which, as vaginal support, a wooden pear is fastened by an elastic rubber stem.

Chapter V. *Ruptures*.—Speaking of traumatic causes of vaginal ruptures, our author doubts that violent coitus can ever produce it, and ascribes it to rough manipulations. Ruptures of the vagina during labor are rare, and happen mostly in multiparæ, in which the width of the vagina does not correspond to the size of the child. Ruptures of the introitus usually occur in the posterior wall during labor, and are generally found laterally of the median line. As the best means of preventing rupture of the vagina, the method of protecting the perineum of Olshausen-Ritgen (Goodell—REV.) deserves the preference.

Chapter VI. *Hematoma* is very rare, about one in two or three thousand labors, and our author found them only in primiparæ, among whom there were some patients somewhat advanced in age. The seat of the hematoma is usually in the posterior wall, and may exist without varices. Author gives the history and treatment of his own (four) cases.

Chapter VII. *Foreign Bodies*.—A great number of all sorts of articles which have been found in the vagina are mentioned, and many interesting cases are given. The incrustation of these bodies with lime-salts, leading to irritation, inflammation, etc., is treated of at length.

Chapter VIII. *Fistule between Vagina and Rectum, and Vagina and Small Intestines*. This chapter (22 pages) is highly interesting, although nothing particularly new is given. In the treatment of these cases, the author is guided by G. Simon, and he considers opiates, for the purpose of binding the bowels, as well as division of the spincter ani in operations for recto-vaginal fistula, unnecessary.

Chapter IX. *Tumors*.—Under this head we find all new growths very ably discussed, and a great number of very interesting cases recorded.

Having given a short summary of the contents of the book, we can heartily recommend it to the study of both general practitioners and gynecologists. The subject is treated of in the most thorough, systematic, and clear manner, but a chapter on inflammation of the vagina is wanting to make the work complete. The reason of the author for omitting inflammations we are at a loss to see, as well as we do not understand why he should speak at considerable length on fistulous openings between vagina and bowels without mentioning vesico-vaginal fistulæ. Concerning the treatment of displacements (Chapter IV.), we entirely disagree with the author. He

states that prolapsus of the vagina is always connected with uterine displacements: both should, therefore, be described together; and displacement of the vagina is nearly always produced by pressure of the uterus, which pulls the vault of the vagina downward. He removes the hypertrophied portio vaginalis by Hegar's funnel-shaped excision, and such tumors as can be reached, to decrease the weight of the uterus, and then narrows the prolapsed vaginal walls by sutures, either by kolporrhaphia or Bischoff's kolpoperineoplastic operation. After this, he uses as *palliative* means for the support of the vaginal wall, a Mayer's ring of soft rubber (perfectly obsolete in this country, and justly so), or round balls of wax or hard rubber, and in some instances finds use even for bandages, to which a vaginal prop is fastened. We, on the contrary, having decreased the weight of the uterus by operation, do not depend upon artificial narrowing of the vagina, for which so many different methods are known, but rely upon a vaginal pessary, which, by stretching the posterior vaginal wall longitudinally, holds the uterus in anteversion, and which has been made to suit the individual case. Our pessary is not a mere prop, but acts upon the lever principle (Hodge), and by its means we utilize the same intra-abdominal pressure, which brought about the prolapsus vaginae et uteri, for the purpose of holding the uterus in anteversion. Only in cases of ruptured perineum is a bloody operation for its restoration necessary. The disgusting external bandages, modified on the principle of Scanzoni and Roser, by various prominent gynecologists of this country, we, for our part, have long since discarded.

F. WILHOFT.

VOL. VIII. DIE KRANKHEITEN DER ÄUSSEREN WEIBLICHEN GENITALIEN, von PROF. DR. H. HILDEBRANDT, in Königsberg, pp. 136.

THE DISEASES OF THE EXTERNAL FEMALE GENERATIVE ORGANS, by PROF. H. HILDEBRANDT, of Königsberg.

This volume is the most complete and systematic work extant on the diseases of the external female generative organs. We cannot too highly recommend this book to the medical profession, and give below a table of contents, in order to show that every subject belonging to this class of diseases is properly treated of.

Chapter I. *Faulty Development*.—Embryological Introduction. Congenital Atresia Vulvæ, Hermaphroditism, acquired Atresia Vulvæ.

Chapter II. *Herniæ*.—Hernia Labii Majoris Anterior, Hernia Labii Majoris Posterior, and Hernia Perinei.

Chapter III. *Vulvitis*.

Chapter IV. *Edema and Gangrene*.

Chapter V. *Exanthematic Processes*.—Erysipelas, Eczema, Herpes, Prurigo, and Diphtheria.

Chapter VI. *Lupus*.

Chapter VII. *Tumors*.—Elephantiasis, Condylomata, Fibrous Tumors, Lipoma, Enchondroma, Varices, Hematoma, Neuroma, Cysts, and Cancer.

Chapter VIII. *Diseases of the Glands of Bartholinus.*

Chapter IX. *Rupture of the Perineum.*

Chapter X. *Reflex Spasms of the Muscles of the Floor of the Pelvis. Vaginismus and Analogous Processes.*

Chapter XI. *Pruritus.*

Chapter XII. *Coccyodynia.*

The perusal of this work has given us a great deal of pleasure, and we found Chapters IX. and X. particularly so very interesting that we cannot refrain from giving to the readers of this JOURNAL a short synopsis of both.

Chapter IX. *Rupture of the Perineum* may be produced by external causes, but is usually the result of parturition. The causes are: insufficient preparation of a narrow vagina with broad perineum, improper guidance of the presenting part of the child through the rima vulvæ, and certain anomalies of the pelvis. Concerning the frequency of perineal rupture, the author gives the following figures:

Schroeder: Rupture of frenulum, 61 per cent.

Rupture of perineum—primiparæ, 34½ per cent;
multiparæ, 9 per cent.

Olshausen: Rupture of perineum—primiparæ, 21.1 per cent;
multiparæ, 4.7 per cent.

Winkel: Rupture of perineum, 11.5 per cent.

Hildebrandt: Rupture of perineum, 7.2 per cent.

Von Hecker: Rupture of perineum, 3.66 per cent.

The percentage of perineal ruptures in primiparæ increases the fourteen per cent in women of advanced age (from 30 to 45 years) according to von Hecker. In speaking of the difference of opinion concerning the consequences of ruptures of the perineum, our author says: "Some gynecologists find after every rupture of the perineum prolapsus of the anterior or posterior vaginal wall, or even a prolapsus of the whole vagina with cystocele and rectocele, while others consider these results rare, even in complete rupture of the perineum. These consequences depend very much upon the constitution of the patient, and the length of time she remains quietly in bed after labor. If she be so situated as to be able to take good care of herself for the first weeks, the consequences, even in complete ruptures, will be simply loss of function of the two sphincters." The question about the manner in which prolapse of the vagina develops itself after rupture of the perineum has occurred is as yet unsettled; but our author explains it thus: As soon as the perineum has been badly ruptured, the flabby and hypertrophied anterior wall of the vagina has lost its support, and sinks down into the rupture. Now, the hypertrophied wall does not undergo involution because it is prolapsed, and a lasting prolapsus vaginæ anterior, followed by vesicocoele, is the result. When prolapsus of the anterior wall of the vagina is at all the consequence of ruptured perineum, it is developed in this manner, and the theory of West and others, who explain such results after rupture by want of direct support of the uterus, should be accepted. The idea according to which the shortened

posterior vaginal wall pulls upon the uterus is still less satisfactory, and is not confirmed by observation. [Our author does not believe that prolapse of the vagina is the natural consequence of rupture of the perineum, when the patient takes good care of herself in childbed, and avoids too early exertion. This is our opinion also, but we insist upon absolute quietude and rest after labor, to favor not only proper involution of the hypertrophied anterior vaginal wall, *but of the uterus*. Fortunately, both purposes are reached by fulfilling this one condition; but we consider perfect involution, and proper position of the uterus, of greater importance to prevent prolapsus of the vagina after labor, than involution of the hypertrophied anterior vaginal wall alone. In our opinion, our author should have said as much, if he thought so; for it is well understood that a heavy uterus, acted upon by the intra-abdominal pressure, before its natural supports have regained their strength, will gradually pull down the vault of the vagina, especially when the greatest natural support of the uterus, the perineum, has suffered considerable injury.—REV.] Concerning the treatment of fresh, incomplete perineal ruptures, our author insists upon closing every rupture, because even small defects may become the source of grave dangers in childbed, and larger ones will be the cause of prolapsus of the anterior wall of the vagina. The operation should be performed during the first few hours after birth, and only in cases of extreme exhaustion of the patient, or where the tissues by protracted pressure have become too soft, and the edges of the wound look discolored, may it be postponed from twelve to sixteen hours. In complete ruptures there is no excuse for not operating at once. Even if the operation, for some reason or other, cannot be finished, a few deep sutures should be passed through the rectum and lower raphé, in order to get union in the most troublesome portion of the rupture. In cases in which the operation cannot be performed within twelve or sixteen hours after birth, it should be postponed until the patient has perfectly recovered.

In addition to the deep perineal, superficial vaginal sutures are recommended to prevent perineal fistulae. The sutures are made with iron wire; catgut may be used for the superficial vaginal sutures, but is not reliable for the deep ones. Opium to bind the bowels is rejected, and daily enemata are recommended. As long as the patient can pass her urine without the catheter, this instrument should not be used. Normal urine does not prevent healing by first intention. In cases of fresh, complete ruptures, the deep perineal sutures should, by all means, be introduced first, the two or three sutures in the rectum next, and afterwards those of the vagina.

Old cases of incomplete perineal rupture should only be operated upon when they are large enough to become the cause of additional trouble. The author describes his manner of operating for old, complete rupture of the perineum after Simon at considerable length in an extraordinarily clear manner, and illustrates it by diagrams. He objects again to the use of the catheter, as not alone

useless, but even dangerous by causing catarrh of the bladder. The bowels should be washed out daily by enemata. Among other methods of operating, that of Hegar, after Simon, is spoken of. Langenbeck's complicated perineo-synthesis has not given any better results than his method, and is far more difficult and tedious in execution. The lately described methods of Bischoff and Freund, which our author describes, have not been sufficiently tried to be judged of. For the operation of incomplete rupture, Baker-Brown's plan is not considered sufficiently reliable.

Chapter X. *Reflex-spasms of the Muscles of the Floor of the Pelvis. Vaginismus and Similar Processes.*—Under certain circumstances, the different muscles which produce narrowing of the canals of the vagina, urethra, and rectum—the sphincter vaginae, urethrae, and ani externus—may be thrown into tonic contractions, and the muscles of the perineum (transversus perinei superficialis and profundus, and the levator ani), may be similarly affected. These muscles may suffer from spasm, either singly or in groups; but scarcely ever are all of them together the subject of tonic contraction. Most frequently the sphincter vaginae is alone spasmodically contracted; but if the cause of spasm continue, the sphincter ani externus may also be affected. Spasm of the sphincter ani externus may exist alone. When the sphincter urethrae is affected, retention of urine, requiring the careful use of the catheter, is produced. Spasm of the transversus perinei causes wood-like hardness of the perineum. The levator ani, when spasmodically affected, may contract (?) the upper portion of the vagina in such a manner as to firmly hold the glans penis during coitus. The author narrates a remarkable case of spasm of all the sphincters and perineal muscles. The vagina, which had been sufficiently wide to permit the introduction of an intrauterine pessary, became *permanently* so narrow that the uterine sound could barely pass, the perineal muscles became as hard as wood, and the sphincter ani externus was so much contracted that only under great difficulties could an enema be administered. Beigel denies that the levator ani can contract the upper portion of the vagina, and proves his assertion by the anatomical relations as described by Luschka. Our author proves his statement upon the same basis, and by clinical examinations of pregnant women; but he explains that he does not speak of *circular* contraction, but rather of compression of the upper portion of the vaginal canal by the rigid levator ani beneath it. (Two diagrams are given, showing the levator ani relaxed and contracted.) The opinions of a great number of authors on the etiology of vaginismus are given for the purpose of showing that the cause of vaginismus is found either in a peculiar sensitiveness of the introitus vaginae or its neighborhood, and sometimes even of the higher portion of the vagina, the uterus and ovaries, or in a habitual sensitiveness or nervous irritability, which may be aggravated by repeated irritation of the parts without satisfying the sexual appetite. At times, one or other of these causes is most predominant. Purely local hyperesthesia of the hymen and introitus vaginae is only exceptionally the cause of vaginismus in

women with normal nervous systems, and general derangement of the nervous system hardly ever produces the complaint by itself. The author's experience proves that these two causes of vaginismus may also produce spasm of the other muscles, and that the different muscles may be separately affected. Concerning treatment the book contains nothing particularly new.

F. WILHOFT.

VOL. IX. DIE KRANKHEITEN DER WEIBLICHEN HARNRÖHRE UND BLASE, von PROF. DR. F. WINCKEL, in Dresden, pp. 231. THE DISEASES OF THE FEMALE URETHRA AND BLADDER, by PROF. F. WINCKEL, in Dresden.

This volume is certainly one of the most ably written parts of the whole work, and is particularly acceptable because it is a complete work on the subject by an author of so high reputation. General practitioners and gynecologists, both, will study the book with pleasure and interest.

The author begins with a historical review of the diseases of the urethra and bladder, which is very interesting indeed, and after a short anatomical and physiological introduction, illustrated by woodcuts after B. S. Schultze, Fürst, and Hasse, enters upon his subject. For the purpose of dilating the urethra preparatory to examining the urethra and bladder, the author describes principally the methods of Simon, which he has always adopted without evil results, but he has not in a single case been successful in sounding the ureters, and considers the operation dangerous. The interior of the bladder may be inspected by the endoscope of Rutenberg, by means of which light is thrown into the bladder, while the latter is expanded by air. The fear of forcing air in and through the ureters is not well sustained, since the author has made use of Rutenberg's method in ten different patients, several times repeated, with splendid success and without evil result. He therefore considers this method, which he fully describes, free from danger, easily learned, and a great advance on our means of examining the bladder. A splendid instrument for the examination of the contents of the bladder is the sound of W. Donald Napier, the beakshaped end of which is covered with pure lead, highly polished, and which being dipped in a solution of argent. nitr. one to one hundred, becomes beautifully black. The smallest foreign body in the bladder, which comes in contact with this end of the sound, leaves its impression or mark upon it. The manometrical examination of the pressure of the bladder (Schatz, Odebrecht, Dubois) is of great practical importance.

Faulty development of the female urethra and its abnormal shape and displacement are treated of separately from those of the bladder, and are described in a most clear and thorough manner. The neoplasms of the urethra are divided histologically as affecting the papillæ, glands, epithelium, and the vessels of the mucous membrane. Among the numerous very valuable and highly interesting cases from the author's own experience, interspersed in the text, we find a case of the very rare hematoma

polypus urethræ, caused by rupture of a varix of the urethra, and removed by the *écraseur*. All these cases give evidence of the vast clinical experience of the author, and the chapter on urinary fistulæ, to which he has particularly given a great deal of care (about seventy pages), shows his capability as an operator.

The historical portion and that on general pathology is given after W. A. Freund, and the surgical portion after Simon, Hegar, and Sims. The author does not believe in the cautery for closing fistulæ, but prefers the bloody operations with the suture. He makes use of iron-silver wire as a rule, but sometimes employs catgut and silk. The best time for operating urinary fistulæ is six to eight weeks after childbirth. In order to avoid vesical catarrh, Winckel suggests that every patient who requires the use of a catheter should have one for her own use, and keep it scrupulously clean. In his hospital this is done, and catarrh of the bladder is a very rare occurrence.

The author earnestly favors local treatment of the diseases of the bladder, and his very large clinical experience has led him to improve the methods of local treatment to such an extent that they require a great deal of training to be learned and a great deal of skill to be properly executed.

F. WILHOFT.

PATHOLOGISCHE ANATOMIE DER WEIBLICHEN UNFRUCHTBARKEIT (STERILITÄT), DEREN MECHANIK UND BEHANDLUNG; von DR. HERMANN BEIGEL, in Wien. Verlag von Fried. Vieweg und Sohn. Braunschweig, 1878, pp. 419.

PATHOLOGICAL ANATOMY OF FEMALE STERILITY, ITS MECHANISM AND TREATMENT, by DR. HERMANN BEIGEL, of Vienna, pp. 419, with 113 plain and colored woodcuts.

Not alone the intrinsic merits of this work have induced us to give it a review, but also the desire to pay a fitting tribute to the memory of its author, too early deceased for the interests of gynecological science. We are confident that by directing the attention of the profession in America to it—the only work treating of the subject from a purely pathological stand-point, and as fully as it does—we are doing a service to all interested in the study of the causes of sterility.

The volume before us is very handsome in external appearance, paper, print, and xylographic illustrations, and is so highly interesting that it is impossible to give a full idea of the work without examining it in detail. It is based upon six hundred preparations from the pathological institute of Vienna, and our author had, in addition, the opportunity of studying a great many post-mortem examinations of women who, with a few exceptions, had not died of uterine disease.

Part I. *Introduction*.—The author declares with emphasis that the considerable anatomical and clinical material which he has had under control during his study, and especially the anatomical part of it, have convinced him of the fact “that there exists no case of sterility which is not based upon material alterations.”

which may, perhaps, not be recognizable during life, because they exist in those parts of the generative organs which do not admit of direct examination. Primary and acquired sterility are terms to which the author objects. Whether sterility has developed before marriage or after parturition is immaterial; both are acquired, the one before marriage, and the other after childbirth or abortion. The author does not agree with Matthews Duncan's laws concerning sterility, and frames his own in these words: "A female, in whom a single or repeated coitus with a healthy man has not caused conception, she being mature and not nursing at the time, suffers from material alteration in her generative organs, which prevents conception mechanically. She is, therefore, sterile and will remain so, so long as the obstacle is not removed."

Part II. *Anatomy*.—In the description of the cavity of the uterus, the author distinguishes a gynecological and an anatomical os internum. The first lies at the narrowest portion of the uterine canal, and the latter is fixed at the spot where the *palmae plicatae* (*arbor vitæ*) with their upper well-marked line divide the cavities of the cervix and fundus uteri. Concerning the generally adopted idea that the uterus is bent or rather slightly curved forward, the author says verbatim: "that the uterus in normal condition is straight in its upper portion (*corpus* and often in a part of the cervix), and that the cervix is more or less curved (*gewunden*), but in such a manner that this curve (*Windung*) never amounts to such a degree of alteration of the uterine axis as to produce a flexion." Some beautiful woodcuts illustrate this description. (From an anatomical stand-point, we do not doubt the correctness of Beigel's statement, but we are, for well-known reasons, satisfied that every method of examination, the anatomical as well as the clinical, by itself must be unsatisfactory, and that it requires a combination of both to arrive at the truth.—REV.) The deep folds of the cervical mucous membrane (*arbor vitæ*) are of importance in the study of the causes of sterility, because they may become hypertrophied, independent of their surroundings, and may, by closing the cervical canal, prevent conception. In five hundred female generative organs, the author found twenty-three times certain small, regular, round, tumor-like formations on the ovaries, which have been previously considered fibrous tumors, but which in reality are small ovaries, and which he terms "accessory ovaries" (*ovaria succenturiata*, Waldeyer).

Speaking of the normal position of the uterus in the pelvis, the author gives the ideas of Martin, Claudius, Credé, Bernhard, Schultze, Schroeder's objection to Schultze, and finally states his own views based upon anatomical and clinical research. His investigation shows that the normal position of the uterus is that of anteversion, in such a manner, however, that the angle formed by the vagina and uterus is slightly obtuse. A normal ante flexion, as B. Schultze describes it, does not exist, and any curve or flexion beyond the degree before mentioned is considered pathological. Concerning ante flexions our author says that every flexion which can be proved by the exploring finger, whether it is accom-

panied by functional disturbances and painful symptoms or not, must be considered pathological." (In this view we think the author has the greatest weight of evidence against him, and we accept the description of Schroeder, Fig. 51, *Krankheiten der weibl. Geschlechtsorgane*, 4th edition, 1879.—REV.) In Douglas' space which he in preference would call excavatio recto-uterina (Hyrtil), he has never been able to find loops of small intestines, and therefore denies the fact, contrary to the statement of a number of our best authorities.

Part III. *Physiology*.—It has been proved by experiments, that the electric current applied to the uterus of animals produces a swelling of the portio vaginalis, a gradual opening of the external os, until it looks like a round hole, and a slight downward motion. This dilatation of the os may continue several seconds after the current has ceased. Our author believes that the portio vaginalis, upon being irritated, answers by contractions, and finds in this fact a factor for conception. The author's definition of menstruation is this: Menstruation is a sexual impulse which occurs at regular intervals, and during which, in consequence of overfilled capillaries of the uterine mucous membrane, and probably also of the Fallopian tubes, blood is discharged. Ovulation has nothing to do with menstruation, but ovulation is probably promoted by menstruation. Leopold comes to the conclusion that menstruation has no connection with ovulation, the periodical maturing of ovules. In proof of this view a number of cases are on record, in which, after extirpation of both ovaries, menstruation returned regularly. Ovulation occurs as well in children as in women who have long ceased to menstruate. The fact that healthy women can become pregnant at any time indicates that in women, whose ovaries are supplied with a sufficient number of follicles, mature ovula are continually on the journey through the tubes and uterus to be fecundated by contact with semen.

Part IV. *Pathology and Pathological Anatomy*.—This part is an excellent treatise on the above subject, clearly written, and profusely illustrated with some sixty splendid woodcuts of selected anatomical preparations. It occupies over two hundred pages. Under the name of defectus portionis vaginalis uteri, the author describes a case of a woman, æt. 32, married and sterile, in whom the vaginal portion was wanting, but the cavum uteri from the os externum to the fundus perfectly normal. Beigel has seen several cases of this defect and is the first to describe it. In all cases the women were sterile. The so-called ovula Nabothi, which have been thought to be caused by closure of the mouths of the mucous ducts of the cervix, are small cysts, which originate in the depth of the mucous membrane. In six hundred post-mortem examinations, there were scarcely ten per cent of the cases in which more or less evidence of former perimetritic inflammation could not be found.

Part V. *Mechanism of Sterility*.—Sterility is hardly ever produced by a single abnormality of the female sexual organs, but

usually by a series of affections. Having removed whatever pathological condition appeared to be the cause, and sterility yet continuing, we have to look for other causes and will probably find them in regions, the true condition of which we have no means of ascertaining. After showing that the different hypotheses about the manner in which the semen has been said to enter the womb are insufficient, the author finds the most natural explanation in the peculiar locomotion of the spermatozoa themselves. The sperma is deposited in the vagina, in which, when the lips of the os externum have the normal shape and the uterus is in proper position, a space, which he calls receptaculum seminis, is formed, which serves for the purpose of holding a portion of the semen in contact with the mouth of the womb. [We have frequently observed that women with backward displacements of the womb complained of the escape of the semen immediately after coitus, until the uterus was replaced and held by a pessary in anteversion. In several cases in which the want of this receptaculum seminis must have been the sole cause of sterility, pregnancy occurred within a short time.—REV.] The author now speaks of possible obstacles to conception and gestation :

a. The growth of the Graafian follicle may be disturbed from the beginning, or it may not sufficiently mature to rupture. The follicles may be situated so deeply in the stroma of the ovary that in their growth they do not reach the albuginea ; they may degenerate before rupturing.

b. The follicle matures normally, but the escape of the ovum is prevented. Peculiar thickness or toughness of the albuginea ; perioöphoritic pseudo-membranes cover the ovaries.

c. The ovum escapes, but does not reach the oviduct. An extraordinarily large ovary, which can only partly be covered by the fimbriated ostium abdominale of the Fallopian tube, permits the escape of the ovum into the abdominal cavity. Causes which prevent the tube from approaching the ovary : Cysts in the alveolus, small tumors attached to the fimbriae, multitudinous small cysts attached to the oviducts. Causes in the oviducts themselves : abnormal fimbriae, extraordinary length of the ligamentum tubo-ovaricum and oviducts, perimetritic adhesion and occlusion of the oviducts.

d. The ovum is received by the oviduct, but the latter is not able to carry it into the uterus. The oviduct is obstructed. Salpingitis, perisalpingitis, tuberculous deposit, hydro-, pyo- and hematosalpinx ; or the ostium uterinum is closed by chronic metritis, polypus, or fibroid tumor.

e. Coitus may be impossible. Faulty development ; atresia vaginae ; toughness and imperforate hymen ; congenital and pathological hypertrophy of the labia and clitoris ; inflammation of the vulva, hymen, and vagina ; carunculæ urethrae ; fissura ani ; coccydynia ; inflammation of the glands of Bartholinus ; pruritus vulvae ; neuromata ; fleshy bands and strings, tumors and cysts in the vagina and hyperesthesia vaginalis.

f. Coitus is not prevented ; the semen enters the vagina, but

the spermatozoa are destroyed by chemical and other agents. The most destructive agents are: Water, saliva, sour milk, alcohol, ether, chloroform, creosote, tannin, acetic acid, metallic salts, ethereal oils, and mineral acids.

g. The spermatozoa are not forced to pass from the vagina into the uterus. Where the receptaculum seminis exists, there is no choice left for the spermatozoa: they can only pass into the uterus and not downward. It does not exist where there is no portio vaginalis at all (defectus portionis vaginalis, Beigel); in uterus infantilis: in conical elongation of the portio vaginalis; in unequal length of either uterine lip (apron-like); polypus of the vaginal portion of the cervical canal; hypertrophy of the uterus; ectropion of the cervical mucous membrane; ante-, retro-, and lateroversion; prolapsus and inversion of the uterus.

h. The semen enters the os externum, but the spermatozoa, meeting with insurmountable obstacles in their advance, cannot come in contact with the ovulum. Besides the obstacles under *d*, which prevent the ovulum from passing through the oviducts into the uterus, acrid secretions in the cavum uteri; vesicular degeneration of the mucous membrane of the cervix (ovula Nabothi); endocervicitis, hypertrophied rugæ of the cervix, tumors of the uterus (splendid woodcut Fig. 105), and flexions.

i. The fecundated ovulum enters the cavum uteri, but the condition of the latter is such that its development is not at all, or only for a time possible (abortion). Diseases of the ovum (anemia, syphilis, and traumatic causes). Causes within the uterus: chronic metritis, endocervicitis, exfoliation or decidua menstrualis, retroflexions and -versions; tumors of the womb, cancer and tuberculosis of the fundus uteri.

Ad g. Our author is, with Winckel, of the opinion that the narrowness of the os externum in cases of conical vaginal portion is not the cause of impotentia concipiendi, but that conception is prevented because the vaginal walls, touching each other immediately before the os, leave no room for the semen (want of receptaculum seminis). Flexions may destroy communication between fundus and cervix, and should be treated as early as possible for another reason. If flexions continue long enough, they become the cause of other troubles, of which para- and perimetritis are the most dangerous.

Ad h. Flexions can prevent communication between cervix and oviduct, either directly, by closing the internal os, or indirectly, by blood remaining in the uterus after menstruation, which in its fluid or coagulated state may hermetically seal the ostia uterina of the oviducts. [The latter portion of the author's statement appears to us a mere hypothesis.—REV.]

Part VI. *Treatment of Sterility*.—The treatment necessarily confines itself to those organs within our reach, but as irritation of some of these organs may become the cause of sterility, they should be treated as soon as detected. The author describes the manner of examining sterile women: Position of patient during

examination, bimanual exploration, uterine sound, speculum, and bloody and unbloody dilatation of the cervical canal. Concerning the extirpation of ovaries for therapeutical purposes, our author is convinced that the removal of healthy ovaries should never be resorted to, excepting in cases of danger of life. The case is different where the ovaries are diseased. Now follow the indications for the operation according to Sims and Hegar, and the author objects emphatically to those which are based upon a "supposed" connection between menstruation and ovulation. Of the methods of operating, the one through the linea alba is preferred. The treatment of vaginismus and pruritus contains nothing new. Frequent injections into the vagina are recommended for the purpose of washing away all secretions which may act injuriously upon the spermatozoa. Sims' bilateral section of the cervix is described at length, and recommended for the purpose of favoring the formation of the receptaculum seminis only. The conical neck is to be amputated with scissors, and the resulting hemorrhage to be arrested by sutures after Sims. Emmet's operation for cicatricial ectropion of the portio vaginalis is described and approved of. The treatment of versions and flexions of the uterus as given by the author is the weakest portion of the whole book. Beigel does not even pretend to properly replace the displaced uterus, but is content with the application of an elastic ring, which contains a piece of watch spring, around the vaginal portion, for the purpose of forming the receptaculum seminis. He has evidently no experience in the mechanical treatment of versions and flexions.

In conclusion we must say that the woodcuts with which the book is profusely illustrated are, with the exception of one, all drawn from nature and splendidly engraved. Figs. 24 and 26 especially are pieces of xylographic art as fine as we have ever seen. Messrs. Friedrich Vieweg und Sohn, of Braunschweig, the publishers, have spared no expense in doing their part of the work in first-rate style, and deserve credit for it.

F. WILHOFT.

ABSTRACTS.

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OBSTETRICS.

1. VEIT: POSTERIOR PARIETAL ENGAGEMENT OF THE FETAL HEAD. —DR. J. VEIT (*Zeitschr. f. Geburtsh. u. Gynæk.*, IV Bd., 2 Hft.) considers that Litzmann's obliquity is very likely to be overlooked, and that, when such is the case, operative interference is very apt to do harm. His own attention was first called to its importance by a case in which, as he believes, he caused the death of both mother and child by performing version. It is wrong to liken it to the reverse obliquity (that of Naegele), for the latter is relatively normal, whilst the former is always pathological. As to causes, the data are not yet sufficient to allow of conclusions.

In one year he met with fourteen cases of this abnormality, eleven of them amongst one thousand labors attended from the Berlin Polyclinic, therefore amongst one thousand cases of difficult labor. Reckoning, however, only those extreme cases in which an ear can be felt in front of the promontory, it is probable that this faulty presentation occurs only once in many thousand cases of labor.

On the strength of five cases in which he was enabled to watch the spontaneous progress of the head through the superior strait, all of which were precisely alike, he is inclined to dissent somewhat from Litzmann's account, according to which the head turns upon its own axis, the posterior parietal bone retreating as the anterior descends. He would rather describe the process as a rotation of the head upon the promontory: in the first place, the presenting posterior parietal bone bulges deep into the pelvic entrance, then the sagittal suture moves away from the symphysis, and at the same time *descends*; the posterior parietal bone comes to lie in the hollow of the sacrum: the longer the labor goes on, the greater becomes the distance between the sagittal suture and the symphysis, but at the same time the former advances farther into the pelvis, and the bone descends. As soon as the head has passed the brim, both parietal bones are at the same level, and the further progress of the labor is the same as in ordinary cases. This rotation may take place rather suddenly, the previous excurvation of the posterior parietal bone having, perhaps, been slowly accomplished; as a rule, however, it is slow. The bulging of the bone is one of the chief difficulties, and it is only too easy to conclude from it that the head has entered the pelvis in its faulty attitude, whereas half of it is still above the brim. This error leads to a second—from the fact that the posterior parietal bone is lying in the hollow of the sacrum, it becomes difficult to reach the promontory, and more and more difficult to feel the parietal itself: hence one may easily be led to infer that the anterior parietal bone alone has entered the pelvis, and that the posterior one has retreated upwards. It is not impossible that a very small head

may enter and pass the brim without changing its faulty posture. In one case craniotomy, with the head at the brim, failed to change the mechanism above described. Spontaneous rectification above the brim seems impossible.

The behavior of the maternal soft parts is equally characteristic and important, especially distention of the posterior wall of the lower segment of the uterus, which is apt to be unilateral, with all the danger of rupture of the uterus which Bandl has shown to attach to such a condition. The degree of this distention varies according to the duration of the labor. In but one case was it altogether wanting, a case in which labor was terminated early by version, undertaken while the head was yet movable above the brim. The distention is usually the result, not the cause, of the abnormal attitude of the head. The direction of the child's spinal column accounts for the distention being limited to the posterior wall. The distention does not of itself interfere with the entrance of the head : it may even allow of spontaneous delivery, if the abnormality be not excessive. External examination does not enable us to recognize this distention positively. The longer the labor lasts, the more is the body of the uterus directed forwards, and in many cases its posterior wall can be felt from before. Tension of the round ligaments is suggestive, but not conclusive. The diagnostic value of an hour-glass form of the uterus is limited to cases in which the anterior wall also is distended. The existence of Litzmann's obliquity is *primâ facie* evidence of such a complication, which can be positively determined only by internal examination. If the os uteri is moderately dilated, the introduction of two fingers or of the whole hand into the uterus enables us to ascertain the condition, but this should be done simply as an exploratory measure, not as an attempt at version, for the temptation is great to finish the version, often to the prejudice of both mother and child. The presence or absence of the distention is the keynote to the treatment : so that the introduction of the hand for the purpose of diagnosis is justifiable.

The diagnosis of the presentation itself is tolerably simple : the presence of the sagittal suture close behind the symphysis, or the mere existence of a wide expanse of bone (the posterior parietal) without suture at the os uteri will strike any careful observer. The slighter grades, however, are not so easily recognized, but in such cases an error is not of so much practical importance.

In studying the mechanical conditions which render the entrance of the head difficult, and give rise to the complication, we must take into account at the outset that the fetal axis is divided into two parts, forming a right or acute angle with each other. The trunk is no longer in a line with the skull. The diameter to engage is almost the vertical. The axis of the trunk, directed against the promontory, coincides with the direction of uterine action. The contraction of the fundus drives the child more and more against the posterior wall of the lower segment of the uterus, distending it mechanically. Now, for the head to enter, its vertical diameter must be turned upon a point fixed by uterine action against the promontory : to do this, a force is required to act upon the anterior end of said diameter, and it is clear that, the more favorable the proportion between this diameter and the conjugate, the less of such force will be needed. The general intrauterine pressure affects so much of the surface of the head as is directed upwards, but this power alone,

although working upon the long arm of the lever, does not seem enough to accomplish the rotation. Its first effect is rather to lessen the diameter by causing the parietal to bulge. Not until this has occurred, perhaps, too, with flattening of the upper parietal, can enough of this force come into play behind the symphysis to force the head through. The danger to the child arises from the great bulging of the parietal bone, the overlapping of the cranial bones, and the curvature of the neck, which latter may readily give rise to compression of the cervical vessels.

In his fourteen cases he lost one mother and seven children (or, reckoning one that died within twenty-four hours, eight). Under favorable circumstances, where the obliquity is not very decided, where the head is small, or the pelvis quite roomy, spontaneous delivery may reasonably be hoped for. Most cases, however, call for interference, and it is apt to be sought for too late, so that no resource is left but to trust still to nature, or to perform craniotomy.

The therapeutical expedients are, rectification, forceps, expectancy, craniotomy, and version. The author never succeeded in rectifying the position; even in those of his cases which ended spontaneously, the result was not at all aided by attempts to assist rotation. Rectification must consist either in improving the attitude of the head while yet it is movable above the brim, or in hastening the natural process of engagement. For the former, the manipulation must be essentially external: the abdominal wall should be lax, the labor should not have lasted long, and the pains should be moderate. Prolonged attempts of this sort may lose us the favorable moment for version. The second method is more likely to succeed. Backward pressure may readily be made upon the prominent sagittal border of the posterior parietal bone, prominent on account of the great overriding which takes place: but such pressure either fails of the purpose, from the fact that the pains restore the head to its previous attitude, showing that something else is necessary to the engagement than a mere backward movement of the sagittal suture: or else it succeeds at once, producing full engagement, as perhaps the next pain alone would have done. In short, the first method is to be recommended only when the pelvis is exceptionally roomy, the os uteri comparatively small, and the diagnosis made positive early in the labor: the second method is worthy of trial before applying the forceps, and *a fortiori* before craniotomy.

The forceps is to be avoided so long as the abnormal attitude persists, so long, therefore, as the head has still to undergo rotation. After the latter has been accomplished, there is no further objection to the forceps.

In well-marked cases, where the os uteri is sufficiently dilated, version would always be indicated, were it not for the danger of causing rupture of the uterus, by any intrauterine operation, in cases of distention of the lower segment—a danger which is much increased if the distention be unilateral. The indication for version is therefore limited. It should be done early in labor, before the above-mentioned distention has become excessive—never when the latter condition has supervened, even if the os uteri be well open.

Perforation may be resorted to, in the mother's interest, in cases where version is contraindicated, but it should not be performed until the mother's condition plainly demands it.

F. P. F.

2. WEBER: ON UNTIMELY RUPTURE OF THE MEMBRANES.—DR. F. WEBER, of St. Petersburg (*Allg. Med. Central-Zeitung*, 1879, Nos. 26, 27, 28), states that the normal time for the membranes to break is, when the presenting part has entered the pelvis, and the os uteri is open to the diameter of four finger-breadths. In cases of delayed rupture, we should not interfere except upon the clearest indications, when the os uteri is fully dilated, and the head lies deep in the pelvic cavity. Still greater caution is to be used in breech cases—the membranes should not be ruptured until the completion of delivery is within our control. Of course, immediate rupture should be resorted to when the bag of waters projects through the vulva, or when the ovum is expelled entire.

About one-half of all deviations from the natural course of labor are due to premature rupture of the membranes. The commonest of the extrinsic causes of premature rupture is meddling interference. Concussions, such as falls and blows, must be reckoned amongst the extrinsic causes, as well as uterine contractions occasioned by fright, drugs, etc. Amongst the intrinsic causes, we must include the condition of the fetal envelopes, especially when they are too thin or too tender. Hydramnios predisposes to it, both by causing over-distention of the sac and by favoring abnormal presentations. A copious accumulation of liquor amnii in advance of the fetus is another cause.

The most common result of premature rupture is, an immoderate escape of liquor amnii, delaying the labor and imperilling the life of the fetus by hampering its circulation. Moreover, it is a powerful excitant of spasmodic contractions. These are apt to be followed by inertia. In dry labors the soft parts of the genital canal are unusually exposed to injury. The mechanism of labor is also interfered with. Cases of presentation of the occiput are apt to be converted, if not often into those of the face or brow, at least into those of direct or oblique parietal presentation; and breech presentations are readily transformed into transverse presentations with prolapse of the arm. [The reporter would add prolapse of the funis.]

The treatment of premature rupture must be mainly preventive. Frequent and incautious examination should be avoided, the woman must be kept quiet, and enjoined to avoid straining. When rupture has actually occurred, it has been advised, in order to prevent undue flow of liquor amnii, to put the patient in the lateral decubitus, and introduce a colpeurynter. Evacuation of the bladder moderates the urgent inclination to strain.

F. P. F.

3. LAEHLIN: PUERPERAL PAROTITIS.—DR. H. LAEHLIN (*Ztschr. f. Geburtsh. u. Gynæk.*, IV Bd., 2 Hft.) relates a case of parotitis occurring in a lying-in woman, and advancing to suppuration, which he attributes to thrombotic metro-phlebitis of septic origin. The woman was delivered with forceps, after which a rupture of the perineum back to the anus was observed, also complete bilateral laceration of the cervix, with several lesser injuries of the mucous membrane about the vaginal orifice. Notwithstanding the assiduous use of carbolyzed vaginal and uterine injections, a certain amount of stagnation of the lochia in the fossa navicularis was observed, which the author attributes to tight closure of this cavity by the labia minora. At one time a cordlike induration was felt, stretching to the right from the uterus. There was no evidence of metastatic deposits in the viscera, except perhaps the spleen, which was somewhat

enlarged, but not tender. On two occasions, there were sensations of chilliness, but no marked initial rigor. The highest temperature reached was 41° R., and the highest pulse-rate 150. The course of the fever was irregular. The patient made little complaint, save of weakness and sleeplessness. Recovery took place under the use of small doses of quinine and the employment of strong Rhenish wine. F. P. F.

4. KALTENBACH: PUERPERAL LACTOSURIA.—In the *Zeitschr. f. Geburtsh. u. Gynæk.*, IV Bd., 2 Hft., DR. P. KALTENBACH, of Frankfort, after summarizing the work of various observers in regard to the connection between lactation and the occurrence of milk-sugar in the urine, details the manipulations which he has employed in Hoppe-Seyler's laboratory in an experimental investigation of the subject, in which he has, as he thinks, avoided reduction by uric acid, mucus, etc., as well as other sources of error. He then notes the results of examinations of the urine of thirty-four lying-in women, which go to uphold the view of du Moulin and de Sinéty, that the sugar found in the urine of lying-in women is sugar of milk, and that its quantity is in close connection with the amount of milk secreted, as well as Spiegelberg's doctrine, that the sugar is a resorption-product. The latter being the case, the cause must lie in an impediment to the flow of the milk secreted, giving rise to stasis. If the tension within the milk-ducts becomes higher than that in the surrounding lymphatics, milk-elements may transude into the latter. None of the fat or caseine can pass over, but only water, sugar, and salts. There are striking variations in the amount of sugar in the urine during lactation. It often disappears entirely, to reappear when the gland has become distended. The relation between milk-stasis and the saccharinity of the urine is most strikingly seen in women whose children were still-born, or have died during the period of lactation. The quantity of sugar is greatest in cases where suckling is prevented by mastitis, affections of the nipple, or puerperal diseases. As lactation ceases, the sugar disappears from the urine. F. P. F.

5. CHR. MEWIS: ON PREGNANCY, PARTURITION, AND PUERPERALITY OF SYPHILITIC WOMEN, WITH AN APPENDIX ON CONGENITAL SYPHILIS (*Zeitschr. f. Geb. u. Gynæk.*, IV Bd., 1 Hft.).—M. has founded his investigations on the reports of the Royal Lying-in Hospital at Dresden, Saxony. Among 5,541 lying-in patients, 167 were affected with syphilis. The following are the conclusions arrived at by M.

1. *As regards pregnancy*: In more than one-half of the cases, pregnancy is interrupted before the middle of gestation. Infection contracted before the sixth month is more dangerous to the fetus than afterwards. In old cases the percentage of abortions decreases, while births at term or at a period after the thirtieth week become more frequent. Contrary to the current opinion, M. says that pregnancy has no influence on the course of syphilis. Besides the local affections, there were no symptoms different from those of non-infected pregnant women.

2. *As regards parturition*: Certain abnormal symptoms occur more frequently in syphilitic than in non-syphilitic women; these are: rigidity of the os, painful labors, and unusual restlessness.

3. *As regards child-bed*: Syphilitic lying-in patients are frequently subject to fever, which could be accounted for by the syphilis only, not by the lying-in condition.

Syphilitic lying-in patients, especially those with fresh secondary symptoms, are predisposed to parametritis.

The local symptoms of syphilis seem to improve in puerperio, without any local or general treatment.

Congenital syphilis. Out of 4,492 children, 153 were syphilitic. A synopsis of these cases suggests the following conclusions:

1. Lues is the chief cause of death in case of maceration of the fetus.

In macerated fetuses, syphilitic eruptions of the skin are of very rare occurrence: they are more frequent in fetuses which died but recently, and are very common in fetuses born alive. Before the eighth month they are never met with.

2. The same is the case with affections of the lungs, though they may be found in specimens but recently dead, after the sixth month.

3. Liver, spleen, bones, are equally affected, yet the nearer to term the more frequent become diseases of the bones.

4. Induration of the pancreas is caused by syphilis. It is scarcely found in macerated specimens, and then only after the eighth month.

5. Degeneration of the intima of the umbilical vessels, especially of the vein, is caused by lues, as is also stenosis of this vessel.

6. In macerated fetuses, the umbilical vessels show signs of degeneration after the fifth month only; in later periods, these signs gradually disappear, and are hardly to be met with in specimens recently dead, or born alive.

7. Affections of the placenta are rare; they present the features of endometritis placentaris gummosa, if found on the maternal surface of the placenta; and of degeneration of the vessels, if met with on the opposite surface.

H. B.

6. M. SÆNGER: ON A CERTAIN DANGER IN THE USE OF PILOCARPINE IN PUERPERAL ECLAMPSIA (*Arch. f. Gynæk.*, XIV., 3).—S. reports three cases of eclampsia in which injections of pilocarp. muriat. ($\frac{1}{3}$ gr.) were used. Although the attacks of convulsions seemed checked, there followed, immediately after the injection, the most severe symptoms of suffocation, as the result of the patient's inability to expectorate the enormous quantity of mucus and saliva: two cases out of three died. While S. thinks pilocarpine to be a very valuable agent in the *beginning, and in slight cases of eclampsia*, he warns us from its use in *the latter stages of the disease, when coma has suppressed the action of the reflex centres*. During labor, when moaning, restlessness, etc., show the reflex centres to be still active, pilocarpine seems the more useful and recommendable, as its beneficial influence on labor itself has been demonstrated beyond doubt.

H. B.

7. DR. FRÆNKEL: ON THE DIAGNOSIS AND OPERATIVE TREATMENT OF TUBAL PREGNANCY (*Arch. f. Gynæk.*, XIV., 2).—In a case of tubal pregnancy, in the 12th–13th week of gestation, F. punctured the tumor from the vagina. He withdrew twenty grammes of amniotic fluid, when a rush of arterial blood induced him to withdraw the trocar. The tumor, which before the operation showed fluctuation, became at once hard and dense, undoubtedly from hemorrhage into the sac. Severe labor-like pains soon followed, and two days later a villous membrane, which was recognized as decidua, was expelled from the vagina. During the next two weeks the patient recovered slowly, and then went to the country, the tumor

remaining hard, manifesting no signs of growing, and the doctor entertained no doubts as to the death of the fetus. Three months later, however, the patient came back, when it was found that a living child, nearly at term, was located in the abdominal cavity, to the left of the uterus. The patient being very low, presenting symptoms of imminent rupture of the sac, laparotomy was at once resorted to. The incision, which was carried through the abdominal wall, unfortunately fell into the placenta, thus causing enormous hemorrhage, which could only be overcome by sewing up the sac and pressing its bleeding surfaces one against the other. The mother died from collapse soon after the operation; the child lived but twenty-four hours; it was apparently about thirty-two weeks old.

Conclusions: If recognized during the first twelve weeks of gestation, a fetal sac developing outside of the uterine cavity should always be operated upon by the combined procedure of puncture followed by injection of morphine. After this time the fetus should be removed either, 1st, by laparotomy, if a certain resistance in the laquear reveals the insertion of the placenta at this point; 2d, by elyotromy, if the contrary be the case. The use of the galvano-cautery (G. Thomas) suggests itself to the operator. Early operation seems the more recommendable from the fact that, at such a stage of development, the sac allows of its being filled up with tampons without bursting.

H. B.

8. KUESTNER: ON INJURIES TO THE EXTREMITIES OF THE CHILD DURING PARTURITION. By OTTO KUESTNER (*Volkmann's Sammlung klin. Vorträge*, No. 167).—Injuries to the extremities of the child during parturition, at least the graver ones, especially those of the bones, happen chiefly through the assistance of third parties. All other lesions of the limbs of spontaneous origin are rarely of medical interest, as they shortly become normal. Frequently the extremities of the child are seriously injured by the accoucheur: this often occurs during version, but generally during extraction. Of course, these accidents are more likely to happen to the tyro than to the expert. K. has met with many cases in which the cure did not progress uninterruptedly: there being formation of pseudo-arthroses, angular consolidations, and osseous lesions. But for these untoward circumstances, these cases would hardly come under observation, the operator generally being anxious to hide his lack of skill. Nevertheless he observed at least twelve cases of this nature within the last three years—a fact which proves that they are by no means rare.

On the *lower extremities* we find contusions, superficial excoriations, and even deep wounds after difficult versions and extractions, particularly when the operator resorted to instruments, such as the fillet and hook. Deep lesions have been observed in the ileo-pectineal fossa from the blunt end of the breech-hook, or from the fillet employed for breech extractions.

Injuries to the bones of the lower extremities are relatively rare, but all forms have been observed. The author knows from literature and from unpublished cases, instances of divulsions of the epiphyses of all kinds, both at upper and lower end of tibia and lower end of femur, and even fracture of tibia. He found, in divulsion of the epiphyses, the legs twisted out of all shape, the toes at times pointing backward. There being no necessity to apply force except in a longitudinal direction, the author of these injuries must have acted against all rules. The modi of the injuries are either a twisting motion or hyperextension. The former will pro-

duce divulsion of epiphyses; the latter, according to circumstances, either divulsion or fracture of the tibia.

Femoral fractures, occurring in the upper half, must be equally condemned. If, in extraction by the hip, either finger or instrument is not inserted exactly in the bend, and hook or finger glide off on to the femur, it easily breaks in its upper third, where it is thinnest, if the force is applied near it. Like all infantile bones, the femur breaks across without splintering. Perforation of the soft parts by the divided ends need not be feared, but the dislocation is as grave as in the adult; and in the new-born, the therapeutics find almost insuperable obstacles.

Divulsion of the diaphyses can be produced solely by a forced movement which in the adult would cause a forward luxation; namely, forcible abduction with rotation outward. It could occur only during version; K. never saw a case.

Luxations of the hip through obstetrical manipulations are said to have been observed (Göschén). There is but one possibility in which it might be produced: a downward force exerted on the neck of the femur, in a breech presentation, the leg being thrown upward; this may cause iliac luxation. According to experiments instituted, this would require an enormous force. If a force acts on the diaphysis, motions which would produce luxation in the adult, would cause a divulsion of the diaphysis in the new-born. These cases are among the rarest.

There are three cases of "obstetrical paralyses" on record; two due to disruption of the medulla oblongata, one consequent on a most difficult forceps extraction.

Injuries to the *upper extremities* are at times pardonable; for instance, a contracted pelvis, with the manipulations generally taught, causing positions requiring extraordinary skill or dangerous force.

The commonest injury to the upper extremities is fracture of the clavicle. Possible causes: direct force, depression of shoulder, or tips of fingers hooked into nucha so as to press on clavicle; more common cause: indirect force through scapula, or scapula and humerus. If the hand is introduced for the purpose of freeing the arm, there being no room in the pelvis which is occupied by both shoulders; or, seeking to depress the scapula, acromion, or shoulder, the position not permitting the clavicle to follow, fracture may occur. In the second case, the arm to be freed may be so firmly fixed that the force acting upon it, and becoming too great, cannot move it. In these instances fracture occurs in a typical place, at one-third of its length from the outside, where the bone commences to flatten at the acromial extremity.

In a similar way, detachment of the epiphyses at the sternal end of the clavicle may be produced, though they may be caused by forcible traction on the arm, perhaps for the purpose of turning the trunk.

Fractures of the humerus occur during the manipulations for freeing the arm; cause—too great burdening of both ends of the lever, which breaks at the hypomochlion. It may be more easily produced when attempting to move the arm with two fingers than with four. The injury is relatively frequent: the author having seen it six times.

Another injury, nearly as frequent, is divulsion of the diaphyses at the head of the humerus. Often the lesion is not diagnosticated at birth or is mistaken: but it is not rarely described in older children, although the symptoms are most pronounced in the new-born. The mode of produc-

tion of this injury and its symptomatology are fully explained and illustrated by diagrams. The healing of divulsion of epiphyses is followed by the gravest functional disturbances, and consequent gradual atrophy of the rotatory muscles. The author enters thus fully upon this part of his subject because these injuries are often taken for luxations or paralyses, and because, much as has been written on the matter, one point of its symptomatology has nowhere been mentioned—inward rotation of the arm.

Luxations of shoulder, if observed at all, belong to the greatest exceptions. Divulsions of epiphyses in the new-born are injuries analogous to luxations in the adult, as in all joints, so also in the shoulder joint. K. explains at length his reasons for differing from the view expressed by Duchenne regarding this injury, and maintains that all cases recorded by the latter were divulsions of epiphyses.

Besides the lesions mentioned, there have been observed: divulsion of epiphyses at the collum scapulæ, fracture of the collum scapulæ, separation of acromion, transverse fracture through scapula, divulsion of epiphyses at lower end of humerus. Of these, only lesions of neck of scapula offer diagnostic difficulties, though they may be and have been recognized.

K. enters again more fully into the consideration of paralyses of the upper extremities, excepting those based on central injuries caused by forceps slipping onto the neck. Grave nervous disturbances follow injuries to the bones and their attachments, when the dislocated piece of bone presses on a nerve or a whole plexus: hence they are constant concomitants of the lesions of the upper end of the humerus. He then reviews the paralyses described by Duchenne and Seeligmüller, and advances the theory that slight paralyses may be caused by extravasations of blood produced by pressure on the shoulder.

The paper concludes with a description of the treatment of the injuries considered, in so far as it differs from the ordinary surgical principles applied to the adult: and with the advice to young practitioners to make a careful examination of the new-born, especially after difficult labors.

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GYNECOLOGY.

9. MARTIN: LITHOPEDION REMOVED BY LAPAROTOMY.—DR. A. MARTIN, of Berlin (*Zeitschr. f. Geburtsh. u. Gynæk.*, III Bd. 2 Hft.), reports a case of a woman 37 years old, who, about eight years after a normal delivery, her health in the mean time having been good, one day felt moderately severe pains in the belly, which disappeared after the application of leeches. Five years later, the pains returned in the same manner, but subsided spontaneously. After this, the patient noticed a thickening in the right side of the abdomen which interfered with her movements. At the close of October, 1877, the trouble became so increased, after laborious housework, that she sought assistance. The little woman was slender and weakly, but was otherwise in good health. The abdomen was soft and even, and its wall was moderately provided with fat. A hard tumor was to be felt reaching above the superior strait. The uterus lay in the left half of the pelvis, retroverted. External pressure upon the tumor depressed the right vault of the vagina. On bimanual palpation, the

tumor seemed as hard as bone. Its lower surface was rough and uneven, but elsewhere it was uniformly smooth. It could easily be pushed up into the false pelvis, although such displacement was painful, whereas it was scarcely tender on mere compression. Below and behind the tumor was a structure which appeared to be the right ovary. The left ovary was plainly felt at the side of the uterus. No adhesions were made out between the tumor and the uterus. With the patient lying on her back, the tumor was found in the true pelvis, but she stated that she sometimes felt it in a higher situation, and that it was that which specially inconvenienced her. The tumor was taken to be a calcified dermoid cyst, and its removal was resolved upon. This was done with antiseptic precautions. The omentum was adherent over a space of two square centimetres. It was with great difficulty that the tumor was lifted out of the pelvis, being too smooth and hard to afford a ready hold to the toothed forceps, and too large to admit of a finger being passed between it and the pelvic wall. It was therefore pushed up from the vagina. It was as large as one's fist, roundish, and without a pedicle, and lay in contact with the *psos* muscles at the edge of the right half of the pelvic entrance. The omentum was first tied in three portions, and a fleshy spur extending toward the left was then tied and cut. Four ligatures were applied to the base, above which it was divided with the knife. No bleeding occurred. The uterus and both ovaries were found healthy. The abdominal wound was closed with alternate deep and superficial sutures, and an antiseptic retentive bandage applied. The patient made a good recovery. The tumor weighed 220 grm. Examination of the specimen, which the author describes, showed it be a lithopedion. As the placenta lay with only its border situated at the base of the tumor, as there were no adhesions save to the omentum, as the tumor was situated in front of the broad ligament, and as the life of the ovum ended at the early period of four months without special cause, the author concludes that the pregnancy was originally tubal and not abdominal. The pains were doubtless those attending the bursting of the sac. It is not so very rarely that we see a like course followed in those cases of tubal pregnancy which we look upon as giving rise to intraperitoneal hemocele.

F. P. F.

10. LEHNERDT: REMOVAL OF A CALCIFIED FIBROMYOMA OF THE UTERUS.—DR. O. LEHNERDT, of Berlin (*Zeitschr. f. Geburtsh. u. Gynæk.*, III Bd., 2 Hft.), gives the case of a woman, 53 years old, with a calcified fibromyoma of the uterus as large as a man's fist, which presented at the os. Its structure, as ascertained by digital examination after bilateral division of the cervix, was made up of a frame-work of stony hardness filled in with sand-like substance. Finding it impracticable to enucleate the tumor, and judging that, even if this could have been done, its removal entire would cause such extensive laceration as to involve the peritoneum, the author was restricted to its removal by morcellment, which was accomplished by the laborious employment, on three different occasions, of an esophagus forceps, a sharp spoon, and a raspatory. The patient made a perfect recovery.

F. P. F.

11. WILHOFT: HODGE'S LEVER PESSARY.—DR. F. WILHOFT, of New Orleans (*Zeitschr. f. Geburtsh. u. Gynæk.*, III Bd., 2 Hft.), discusses the mode of action of the Hodge pessary, which he regards as that of a lever. The weight of the abdominal contents falls upon the long arm (which

should not be long enough to impinge upon the pubic arch), and throws the short arm upwards, stretching the posterior wall of the vagina, and thus dragging the cervix backwards. In opposition to most writers, he considers this to have been Hodge's theory of its action. He looks with disfavor upon all the so-called modifications of the instrument, and states that he has been perfectly satisfied with the results he has obtained with the original instrument during his practice of seventeen years. He himself makes the pessary for each patient, and requires several trials to get a fit.

F. P. F.

12. SCHRÖDER: THE REMOVAL OF CANCER OF THE VAGINA.—SCHRÖDER has operated in three cases (*Zeitschr. f. Geburtsh. u. Gynæk.*, III Bd., 2 Hft.), in all of which the disease occupied the posterior wall, affecting also the posterior lip of the cervix to a certain extent, and in one case the anterior lip too. After excising the affected portion of the cervix, a flap comprising the whole thickness of the vaginal wall was removed. In the first and second cases the operation was completed by suture of the cut edges. Accumulation of the discharges from the wound took place in the space bounded above by the stump of the posterior lip and the peritoneum, and one of the patients died. In the third case a drainage tube was stitched into the posterior vault of the vagina, and the formation of a pouch was prevented by passing some of the sutures so deep as to include a portion of the wall of the rectum, but not deep enough to invade its lumen. The patient did well.

F. P. F.

13. SCHRÖDER: THE OPERATION FOR EXCESSIVE ELEPHANTIASIS OF THE VULVA.—To avoid excessive loss of blood and the delay attendant upon the application of a number of ligatures, as well as to do away with the impediment to primary union which the latter produce, SCHRÖDER (*Zeitschr. f. Geburtsh. u. Gynæk.*, III Bd., 2 Hft.), begins his incision at the lower end of each labium, and applies deep sutures as he goes along, so that no ligatures are found necessary. In one case the formation of a thrombus was prevented by compressing the skin against the underlying cellular tissue by means of a sort of padded suture.

F. P. F.

14. SCHRÖDER: EXCISION OF THE MUCOUS MEMBRANE OF THE CERVIX FOR CATARRH OF LONG STANDING.—SCHRÖDER (*Zeitschr. f. Geburtsh. u. Gynæk.*, III Bd., 2 Hft.) remarks upon the difficulty of bringing about a cure in cases of inveterate disease of the lining membrane of the cervix, especially the cases in which marked glandular hyperplasiae give rise to profuse secretion, and are apt to lead the way to malignant degeneration; those in which the mucous membrane, often rather thin, forms a close investment of circumscribed, tuberoso outgrowths of the cervical parenchyma (precisely the cases which give rise to profuse and extremely obstinate hemorrhages); and those in which the glandular neoplasm dips down between the connective-tissue fibres of the cervix. Excision of the cervical mucous membrane is the readiest and most efficient remedy, and wholly devoid of danger. The uterus being drawn down as much as possible, and the lips of the cervix everted, the whole of their inner surface is cut away with a knife, and the flaps are inverted and stitched to the tissue bordering upon the upper end of the wound, which tissue should have been deeply cut into at the first incision, so as to afford a good hold to the sutures. If the cervix is not easily everted, it may be divided bilaterally as the first step in the operation. Primary union is the usual

result. The author has operated in this way thirty times with good results.

F. P. F.

15. BERNUTZ: ON MEMBRANOUS DYSMENORRHEA.—DR. G. BERNUTZ (*Arch. de Tocol.*, Jan. and Feb., 1879) remarks that the structure of the membrane is the only point in the history of this affection upon which authors are agreed. He raises the question of how far the membrane is per se a cause of the dysmenorrhea, and, as an aid to its solution, calls attention to a class of cases in which membranes are passed in large pieces at each menstruation, but without any dysmenorrhea. He thinks that instances of this sort are not very uncommon, although they rarely come under observation on account of the absence of symptoms. He gives three cases of this kind, one of which had been published by Dr. L. Mayer. In the two other cases, the membranes were examined by de Sinéty, Graucher, and Guéniot, and found to be identical in structure with those found in membranous dysmenorrhea. In one of the cases (the author's own), the patient was under observation during fifteen menstruations, in which the membranous exfoliation never failed, but only one of which was attended with expulsive pains. He thinks that the pain on this single occasion may have been due to a physical examination, including the use of the sound, having been made twelve days before. In this case there was also membranous enteritis. The patient was much benefited by Fowler's solution in small doses, never more than six drops a day, continued for several months. The two other patients were absolutely free from dysmenorrhea. In one of them a physician had diagnosed stenosis as a cause of sterility, for which latter condition the patient had consulted him. He dilated the cervico-uterine canal once or twice a week for five months. This was well borne at first, but finally gave rise to a parenchymatous metritis complicated with pelvic peritonitis. After recovery from this attack, the menstrual exfoliation still continued, but was afterwards much diminished, apparently from the use of the waters of Saint Sauveur.

The author considers the appearance of the membrane as regards coloration by blood, as bearing upon the pathology of the affection—such coloration being most marked in cases of dysmenorrhea; and states that his remarks have no reference to the granular or fibrillar fibrinous casts characteristic of pseudo-membranous or exudative dysmenorrhea. Membranous dysmenorrhea is especially frequent in debilitated women. The exfoliation and the dysmenorrhea are separate entities, and there is not necessarily any close connection between the two. We are not justified, however, in the radical conclusions that the exfoliation is an epiphenomenon—insignificant, except perhaps as regards sterility; and that cases of so-called membranous dysmenorrhea are, therefore, nothing but cases of ordinary dysmenorrhea, some of which are obstructive, the greater number congestive, and a few nervous in their nature. It may be, on the contrary, that there are differences, which we at present cannot define, between the process going on within the uterus in cases of true membranous dysmenorrhea and that which gives rise to membranous exfoliation without dysmenorrhea.

The three cases given disprove the obstruction theory of Oldham and Simpson. Indeed, we can scarcely admit that a membrane of only 1-3 mm. in thickness at most, and 3 or 4 mm. long, supple, flexible, capable

of being converted into a thread or torn by a very feeble effort, can give rise to such a disordered action of the uterus, lasting so long—one to five days—whereas the dysmenorrhœal membrane is not expelled until the middle or end of the flow. Some, dissatisfied with this theory, have, in order to retain part of it, divided the membranous dysmenorrhœal crisis into two factors, attributing the expulsive pains partly to an irritation of the muscular tissue of the uterus produced by the detachment of the membrane, to which it should, in the author's opinion, be wholly referred. In cases of stenosis, where a cure has sometimes followed dilatation, doubtless very great importance should be imputed to the stenosis. But these cases include an exceptional feature, and we cannot generalize from them in regard to membranous dysmenorrhœa at large; still less from those cured by Simpson's bilateral or Sims' antero-posterior incision, or a more or less slow dilatation, for these proceedings may put an end to the pathological condition by some *modus operandi* other than mechanical.

The endometritis theory, apart from the fact that Tilt's autopsies, in which he constantly found thickening of the endometrium and increased vascularity of the uterus, which he attributed to ovarian influence, included cases of exudative dysmenorrhœa, is weakened by the fact that the membranous dysmenorrhœa often antedates the endometritis, and by the great rarity of membranous dysmenorrhœa in comparison with endometritis, in one of the cases of membranous exfoliation cited, indeed, the subsequent development of endometritis did not render menstruation painful. We may admit, however, that, given the requisite conditions, an endometritis may precipitate the dysmenorrhœa.

Williams' theory, that the affection is due to an excess of fibrous tissue in the uterus, caused by endometritis, subinvolution, or incomplete development, is likewise open to the objection that the frequency of these conditions is out of all proportion to that of membranous dysmenorrhœa.

Gautier's theory, that the mucous membrane of the uterus undergoes an hypertrophy like that of the tongue in cases of psoriasis lingualis (which Gautier calls *ichthyosis*) is disproved by the fact that the cast-off membranes never equal in thickness the normal endometrium as examined just before menstruation.

The congestion theory is too vague to be of any practical use, and moreover multitudes of woman suffer from excessive menstrual fluxion without being affected with membranous dysmenorrhœa.

The theory of Saviotti and Courty, that the exfoliation is due to an excessive proliferation of cellular tissue in the tunica adventitia of the arterioles and venules of the mucous membrane, whereby these vessels are so compressed as to cut off the nutrition of the superficial portion of the membrane, rests upon hypothesis only, but merits attention from its having been reached by these two observers independently. Solowief, who found the cast-off membrane composed of an external, fibrinous layer, a middle layer made up of glands, vessels, and a granulation tissue which was continuous with the inner layer, consisting essentially of granulations, thinks that a true decortication occurs as the result of an extravasation of blood into the soft granulation tissue. Christo has observed thrombosis of the capillaries of the mucous membrane, which, if confirmed by further observation, may be a second stage in the process of exfoliation. Whatever may be the case as regards compression of the vessels or their obstruction by thrombosis, it is demonstrated that the

extravasation takes place—a sort of interstitial capillary apoplexy, and that the membrane is forcibly detached. In one of the three cases of exfoliation without dysmenorrhea there was no evidence of such extravasation, and in another there was scarcely any. In the latter the membrane was generally only about 1 mm. thick, and showed but very few utricles.

We may say that membranous dysmenorrhea, membranous exfoliation without dysmenorrhea, and the physiological molecular separation of the whole external portion of the mucous membrane are but different degrees of the same process. In the first, in which there is extreme perversion of the normal process, we observe not only sterility, but an assemblage of morbid symptoms. The menses are general profuse, and in particular, under the influence of the interstitial apoplexy which takes place in the granulation layer, and which causes the entire separation of most of the uterine glands, we see the muscular tissue, irritated by the proximity of the morbid process going on in the deep portion of the mucous membrane, become affected with irregular contractions, which, in spite of their intensity, are more or less ineffectual in consequence of the lack of regular dilatation of the cervix, which results from their ataxy, and simulates a temporary constriction. We may thus understand that any supervening irritation of the uterus, as the passage of a sound, coitus, endometritis, or any uterine affection involving persistent circulatory derangement, may intensify any slighter interstitial apoplexy, and thus convert a case of painless membranous exfoliation into one of membranous dysmenorrhea. The predisposition is met with especially in debilitated, and more particularly in scrofulous women. The general health should be the guide to treatment, especially with arsenic. Topical treatment should be avoided. Dilatation generally does harm. Even the passage of the sound should be omitted, if possible.

F. P. F.

16. Dr. FR. KEPPLER: THE FLOATING KIDNEY AND ITS SURGICAL TREATMENT (Langenbeck's *Archiv*, Bd. XXIII., Heft 3).—[The frequency of this affection in women, and the possible causative influence of labor in its production, have induced us to abstract this otherwise non-gynecological paper.]—K., from personal observation in eleven cases of this anomaly, emphatically dissents from the views hitherto expressed in text-books as to the harmlessness of this affection, and proves, in the cases cited, that even the uncomplicated variety is serious enough to incapacitate patients for work, and is at times so severe as to drive the sufferer to suicide. He sees a certain parallelism between the ineffectual treatment thus far in vogue, and the statement that its pathological significance is slight, and that the complaints arising therefrom should be classed among hypochondriasis and hysteria. Seeing the inadequacy of all other means, he conceived the idea to remove the offending organ by nephrotomy by means of the abdominal section, and accordingly induced A. Martin to perform the operation, with his assistance, at the former's private clinic. K., as the instigator of the operative procedure, assumes a share in the moral responsibility therefor, and cites the two unique cases, both successful, in justification: every symptom being recorded with more than common minuteness and exactitude. The operations were performed under chloroform, with all antiseptic precautions. In the first case, the abdominal cavity was opened by an incision 10 cm. in length, in the linea alba between umbilicus and symphysis. The dislo-

cated kidney was easily found at the place indicated by external examination, inclosed in a sac-like pouch in the peritoneum, and was drawn with the investing sac by the hand through the wound. After the left kidney had been palpated in its normal position, the sac was opened above its convex margin, the lower end of the kidney dissected off with knife and fingers, and then seized with a Muzeux forceps. From here the entire peritoneal covering was uniformly freed on both sides up to the hilus, the pedicle first tied in a general ligature, cut in the centre, again ligated on both sides, and then divided between hilus and ligature. There was no arteria aberrans, and no trace of hemorrhage from the vessels of the pedicle. Two small but profusely bleeding vessels in the peritoneum were closed by sutures; the opening in the peritoneum, and the space back of it, washed off with a two-per-cent carbolic solution and dried with carbolized sponges on stems; the peritoneal opening sewed up, and the abdominal cavity washed out with the carbolic solution, and dried with carbolized sponges; after convincing themselves that there was no further hemorrhage, the abdominal wound was closed with six sutures, a large sponge being left in the abdominal cavity until the last two threads were to be tied, when it was removed, and was found entirely free from blood. The wound being completely closed, a Lister's dressing was applied. The operation lasted thirty-six minutes. The extirpated kidney was quite healthy. After a convalescence of two months, with various exacerbations, patient was discharged cured. The urine after the operation was at first strongly albuminous, which the author attributes to the increased flux to the remaining kidney.

The second operation did not differ much from the first. The incision was 20 cm. long, one-third of which was below the umbilicus, and extended in depth to the peritoneum. The right kidney having disappeared from the anterior abdominal wall, patient had to be turned on her side and the kidney shaken to the opening, where it was seized by the fingers. The very vascular peritoneal envelope was divided, and the kidney with its capsule held in a Muzeux forceps. The hilus was tied with five stout silk threads by means of long curved needles. The final ligature was applied over all others, thus forming a thick pedicle. The kidney was easily separated by the knife; no hemorrhage. The pedicle was dropped and the ligatures cut off short. No blood escaped into the abdominal cavity. The wound was closed with ten sutures; some of them deep, inclosing the peritoneum; others superficial; antiseptic pressure-bandage. Duration of operation, fifty minutes. Wound had closed, and patient was discharged in seventeen days. The urine, examined during the seven days succeeding the operation, was yellow, slightly turbid, of acid reaction; spec. grav. from 1015 to 1028; free from albumen, and only during a few hours showed traces of sugar. The extirpated kidney was healthy.

As to the etiology of floating kidney, K. cites the following facts. In four cases, the affection occurred suddenly, in consequence of violent movements of the body; in one case, from general emaciation, and disappearance of the fat in the region of the kidney, succeeding typhus fever; in one, suddenly in connection with labor [this cause makes it of special interest to the obstetrician: see *Wiener Med. Wochenschr.*, No. 17; also the current number of this JOURNAL, p. 751]; in one, the two last-named causes appeared to have co-operated in the gradual production of this anomaly; in four cases, no definite cause for the affection can be assigned—

in some it seems to have formed gradually. In all cases, the *right* kidney was the one affected.

In none of the cases observed by the author was there any depression in the corresponding part of the lumbar region—a statement found in all works on diseases of the kidneys which requires revision. The author pronounces as *absolutely false* the dogma that floating kidney may be diagnosed by the percussion sound in the lumbar region; the physiological kidney-dullness being still present even after extirpation. The only absolutely certain diagnostic means is bimanual palpation in the lumbar and hypochondriac regions. The movable organ may thus be caught between the two hands and palpated, its shape and mobility determined, and the pulsation of its artery perhaps be felt. He cautions particularly against the method commonly employed in searching for the floating kidney, viz., to feel for the organ with the finger-tips of both hands pressed deeply into the abdominal walls: in this manner a tumor may be felt; but its shape, size, mobility, or even pulsation of the arteries cannot be recognized with any degree of certainty. *

17. HAUSSMANN: THE SPONGE-TENT TREATMENT OF STERILITY.—DR. D. HAUSSMANN, of Berlin (*Zeitsch. f. Geburtsh. u. Gynaek.*, III Bd., 2 Hft.), reviews the subject of dilatation of the os uteri by tents, chiefly those of compressed sponge, for the purpose of facilitating impregnation. He regards the success which has sometimes attended this practice as due to an exceptionally long continuance of the dilatation obtained, the mucous membrane lining the cervical canal having in the mean time regained its normal condition: for amongst the effects of a sponge-tent, even if kept in situ for a very short time only, are these: the epithelium is shed, and therefore cannot assist in the migration of the spermatozoa: the secretion found within the uterus is so changed in quality as to put an end to the movements of the spermatozoa. Carbolyzed tents are open to the objection that even a two-per-cent solution of carbolic acid arrests the movements of the spermatozoa. The author thinks it probable that laminaria tents are equally objectionable, since vegetable mucus exerts a deleterious action upon spermatozoa.

F. P. F.

18. KUESTER: THE OPERATIVE TREATMENT OF STENOSIS OF THE UTERINE CANAL.—DR. E. KUESTER (*Zeitschr. f. Geburtsh. u. Gynaek.*, IV Bd., 2 Hft.) reviews the various operations for uterine stenosis, classing under the head of "*stomatoplastice uterina externa*" the bilateral discision of Jobert and Simpson, the radiate discision of Kehrer, circular amputation of the portio vaginalis, and the chine-shaped [kegelmantelförmige, "wedge-flapped excision," see this JOURNAL, Vol. VIII., p. 564] excision of Simon and Marckwald. He thinks that the latter operation has been too much neglected, probably from its being supposed to be difficult of performance. He has done it thirty times without a fatal result, and without failure to secure patency of the os uteri. As his method of operating differs in some details from the methods of Simon and Marckwald, he gives it minutely with drawings. The most favorable circumstances are—a freely movable uterus, with a firm and not elongated vaginal portion, and a narrow os externum; for in such cases the lining membrane of the cervix need not be interfered with, the incised mucous membrane being only that covering the cervix. The patient is anesthetized and laid in the dorsal decubitus, although the matter of posture

is comparatively unimportant. The vagina having been washed out with a five-per-cent solution of carbolic acid, the cervix is fixed with a hook, and divided bilaterally with scissors, the division being continued through the os internum by means of a straight probe-pointed bistoury, or a Sims' knife. The anterior lip is now seized with a toothed forceps, and the uterus drawn down to the vulva. The speculum may then be removed. The point of a knife is entered in the posterior lip on its right side, at the border made by the scissors, a few lines from the verge of the os externum, and swept around in a saw-like manner to the corresponding point on the other side. In this incision the point of the knife is kept constantly directed away from the cervical canal. The knife is now entered a second time, at a distance of about half a centimetre outwards from the former point on the right border, and a second incision made, concentric with the first. This time the point of the knife is kept directed towards the cervical canal, so that the two insertions meet above at an acute angle. A few slight cuts may be needed to complete the detachment of the included piece. The sutures are applied at once, the first one at the point of greatest bleeding, the needle being inserted close to the os uteri, but not within it, and made to enter the wound as near as possible to its bottom, then inserted into the outer lip at a corresponding point, guided along under the cut surface, and made to emerge a few lines from the outer border of the wound. The sutures are left loose until all of them have been inserted. On tying them, there is usually no difficulty in making the wound linear, especially with the aid of a hook or hooked forceps. Four sutures are generally enough, with an additional one on each side to approximate the edges of the wound made by splitting the cervix. The sutures are not cut short at once, but are used to draw down the uterus while the same operation is done upon the anterior lip. After cutting the sutures (not too short), the wound and the neighboring parts are again disinfected, and the uterus is replaced. Any dressing, of whatever sort, is wholly superfluous. The sutures may be removed from the fifth to the seventh day.

If the cervix be long, slender, and conical, the first incision should implicate the lining membrane of the cervix at a sufficient distance above the os externum to shorten the cervix to the extent desired. In this case the sutures, it is true, are more apt to cut through, but, as there is no strain, this, for the most part, does not interfere with healing by first intention.

The operation is rather more troublesome if the vagina is narrow and rigid, and the uterus can be drawn down but slightly. The difficulty is not in the excision, but in the application of the sutures. To do away with this difficulty, the author has devised special needle-holders, which he figures and describes in detail. After this operation the os uteri always remains wide open, sometimes with slight ectropion, so that a recurrence of the stenosis is in all cases impossible.

Under the head of "*Stomatoplastice Uterina Interna*," he describes the following modification of Sims' posterior discision for acute ante flexion: Sims' speculum having been introduced, the cervix is drawn with a hook so far upwards and forwards that its posterior surface presents at the vulva. A small triangular flap of mucous membrane, with its point at or above the os externum, and its base somewhat above the insertion of the vaginal wall, is dissected up. The posterior lip is then divided in the median line, the cut in the lining membrane being prolonged well beyond

the os internum. A triangular, wedged-shaped portion of tissue is then cut out from each lateral half of the split lip, the excised portions being so shaped that, when the two halves of the lip are brought into apposition, a V-shaped wound embraces the os externum. Sutures are now applied to the arms of the V-shaped wound, but before tightening them, the triangular flap is folded in over the upper end of the discision wound, and its point stitched to the lining membrane of the cervix as high up as possible. This step is the only difficult one in the whole operation. The sutures are then tied. In the few cases in which he has employed this method, the relations of the parts have remained the same as they were immediately after the operation: in one case only there was retraction of the flap, and the result was therefore imperfect.

Under the head of cicatricial stenoses of the os internum, he describes a case of extreme stenosis [? of the os externum] occurring as the result of a funnel-shaped excision. Bilateral discision, with the use of a triangular flap as above described, produced but a temporary result, and he then removed the cicatricial tissue from the posterior lip, forming a quadrangular denuded surface, which he filled up with a flap slid around from the lateral wall of the vagina. [The reporter fails to see what all this has to do with the os internum.]

F. P. F.

19. MARTIN: VESICO-UTERINE FISTULA.—DR. A. MARTIN, of Berlin (*Zeitschr. f. Geburtsh. u. Gynaek.*, IV Bd., 2 Hft.), considers that these fistulae are less rare than is commonly supposed, but that they often escape detection on account of their proneness to spontaneous cure. He gives a case in which direct closure was effected by operation, making the sixth on record, so far as he has been able to ascertain: cauterization, etc., having failed to effect closure of the fistula, and the patient's condition demanding relief, the fistula was pared and closed with iron sutures. For a few days the vaginal discharge had a urinous smell, but complete closure of the fistula took place, and the patient fully regained her health.

F. P. F.

20. BENICKE: LAPAROTOMY FOR EXTRAUTERINE PREGNANCY.—DR. F. BENICKE, of Berlin (*Zeitschr. f. Geburtsh. u. Gynaek.*, IV Bd., 2 Hft.), relates the case of a woman, aet. 33, who had borne two children, the last one twelve years before. Five years before she had had an abortion, after which she had been very ill with an abdominal inflammation. She now considered herself pregnant, and had felt the fetal movements plainly. Her last menstruation appeared February 3d, 1877. The fetal movements continued up to the latter part of October, when pains set in, which she supposed to be those of labor, and a physician diagnosed a transverse presentation. The pains having continued to increase for two days, the family physician was called, who discovered an intense and rather diffused peritonitis. This gradually subsided under the usual treatment, but the abdomen remained highly distended, and the patient's general condition was becoming worse from day to day.

Dr. Benicke first saw her December 19th, when she looked pale and miserable, and was highly emaciated, but complained of only moderate abdominal pain. The breasts were swollen, and yielded milk. An examination, repeated under anesthesia a week afterwards, showed the abdomen enlarged to about the size seen in the eighth month of pregnancy. A firm, tense, smooth tumor was felt through the abdominal wall, reaching to

about a handbreadth below the ensiform cartilage, and so far on either side that its transverse exceeded its vertical diameter. Fluctuation was plainly felt over the left half of the tumor, less plainly on the right side. Low down on the right side, some rather harder masses were felt, which seemed to lie in or close upon the wall of the tumor. No fetal parts were recognized. The uterus was enlarged and pushed forwards, the fundus being plainly perceptible above the symphysis. The probe showed the uterus to be 9.3 cm. long. The posterior vault of the vagina was moderately depressed, and through it was felt the lower wall of the tumor, not tense, and not reaching deep into Douglas' space. On the right side the tumor lay close upon the uterus, no pedicle being felt. On drawing the uterus down with forceps, which could be done only to a limited extent, the tumor was felt to be closely connected with the right border of the uterus, and seemed to extend laterally between the layers of the broad ligament. Adhesions to the posterior wall of the uterus seemed to exist.

Only the history pointed specially to extrauterine pregnancy, and even with this, the diagnosis between such a tumor and a cyst of the ovary was doubtful. In either case, however, the patient's condition demanded operative interference.

Laparotomy was performed December 28th, with antiseptic precautions. The Fallopian tube, very much elongated, was found stretching to the right above the tumor. Adhesions to the peritoneum, the result of the preceding peritonitis, were found on the right and in front, which were pretty easily separated with the hand. On the left side the tumor was entirely free. Towards the pelvis it could not be isolated, being sessile upon the cellular tissue between the layers of the broad ligament, closely connected with the right border of the uterus, and firmly adherent to its posterior wall. Behind and below there were adhesions to the omentum, and to a few intestinal coils. The formation of a pedicle being found impossible, it was determined to lessen the bulk of the tumor by puncture, after the manner of Schroeder in cases of cysts of like insertion, leaving the subserous portion behind to be stitched to the abdominal wall. A large quantity of yellowish-gray, turbid fluid, resembling an emulsion, but not putrid, was withdrawn with a Wells' trocar. On enlarging the opening for the purpose of examining the contents of the cyst, a coil of funis came into view, settling the diagnosis. The fetus lay transversely, in the second position. It was extracted by the feet. The placenta was implanted on the upper and inner portion of the cyst. It was very large, but was easily separated from the cyst-wall without hemorrhage. A few omental and intestinal adhesions were then divided, rendering several ligatures necessary. The bleeding which took place from the cyst-wall, as the removable portion of it was cut away, was controlled by the sutures. A vaginal drainage-tube was not inserted. The remaining portion of the cyst was plugged with salicylized wadding, and a dressing of the same was laid upon the abdomen. The operation lasted two and a quarter hours. Collapse, lasting for half an hour, followed at once, but the patient gradually rallied, and did well. Abundant suppuration soon set in, with heightened temperature, so that the operator regretted the omission to use a drainage tube. The use of carbolic injections gave rise to symptoms of carbolic acid poisoning, and chlorinated water was substituted. The patient recovered.

F. P. F.

21. D. HAUSSMANN: ON THE PALLIATIVE TREATMENT OF INCONTINENTIA ALVI CAUSED BY ENTIRE RUPTURE OF THE PERINEUM (*Zeitschr. f. Geb. u. Gynaek.*, IV. Bd., 1 Hft.).—A sure and definite cure of incontinentia alvi can only be obtained by a plastic operation. Yet there are cases where such an operation, from whatever cause this be, has to be deferred, when the following simple means will be found most beneficial as a temporary relief: A rubber ring-pessary is introduced in a proper position into the vagina: it at once closes the rectum for the passage of flatus as well as feces. H. used this instrument in a IIIpara, æt. 40, who declined an operation. After the ring had lain in place for some time, the passages which before had always been diarrhoic, became natural, even dry, so as to necessitate purgatives: flatus but seldom escaped. H. B.

22. T. KRONER: ON REDUCTION OF OLD INVERSION OF THE UTERUS BY MEANS OF THE KOLPEUTRYSTER (*Archiv f. Gynaek.*, XIV., 2).—IXpara, æt. 43. Inversion and procidentia of the uterus occurred after the last confinement, fourteen months ago. Introduction of the dilator soon followed by labor-like pains: the next day inversion reduced. In addition to this case, K. reports five others from several other surgeons, where an equally good and prompt result was obtained by the dilator, as first recommended by Tyler Smith.

1st (Bockendahl), Ip., æt. 25; inversion six years old, reduced after six days. 2d (Schroeder), inversion two years old, reduced after eight days. 3d (Grassi), ?para, æt. 22; inversion thirty-eight days old, reduced after two days. 4th (Abbie C. Tyler), Ip.; inversion eleven years old, reduced after forty-four hours. 5th. (Courty), IIIp., æt. 26; inversion four months, reduced after eleven days.

In concluding, K. accords the use of the dilator (tampons) the first place in the treatment of inversion, it being at the same time not painful, safe, and efficacious. H. B.

23. H. BRUNTZEL: SIX CASES OF EXTIRPATION OF THE UTERUS AFTER THE METHOD OF FREUND (*Arch. f. Gynaek.*, XIV., 2). From the clinic of Prof. Spiegelberg, at Breslau.—1st. Nullipara, æt. 18: sarcoma polyposum hydropicum colli uteri: the bladder and S. romanum attached to the sarcomatous growth, perforation of the rectum, septic peritonitis, death fifty-three hours after operation. Duration of the operation, two and one-quarter hours. 2d. IIIpara, æt. 47: carcinoma corneum portionis vaginalis: profuse hemorrhage. The whole intestinal tract kept back in cavo abdominis during the whole operation. Both ovaries caught into the sutures closing the pelvic cavity; recovery: discharged twenty-four days after operation: duration of operation, two and one-half hours. 3d. Ipara, æt. 41: carcinoma papillare portionis vaginalis: rigidity of the abdominal muscles and great difficulty to keep the intestinal tract out of the unusually deep Douglas' cul-de-sac: bladder greatly distended, infiltration of the left side of the laquear; enormous loss of blood: death twenty-four hours after operation, from exhaustion. Universal peritonitis. Duration of operation, two and one-quarter hours. 4th. Ipara, æt. 51: carcinoma papillare labii anterioris orificii uteri. The pelvic cavity being exposed, it was found that the malignant growth had already invaded into different parts adjoining the uterus, therefore the operation was given up, and the abdominal wound closed by sutures. Union by

first intention. 5th. VIpara. æt. 41; carcinoma colli uteri: in trying to lift the collum with the finger, the corpus uteri breaks off from the collum, at the place of the os internum. During the operation collapse, from which the patient died thirteen hours after operation. Duration of operation, one and three-quarter hours. 6th. IVpara. æt. 40; carcinoma colli uteri: both ureters caught into the ligature of the broad ligaments. Peritonitis purulenta diffusa, hydronephrosis, and fresh parenchymatous nephritis: death four days after operation. Duration of operation, two hours.

Fränkel has asserted that hysterotomy offers less difficulties than a somewhat complicated case of ovariectomy—a statement which no surgeon will corroborate who has ventured upon the new operation. The dangers incident to hysterotomy only, *i. e.*, which are not, or not to the same extent, met with in ovariectomy, are: 1st, the opening on two sides of the peritoneal sac (from both the abdominal and pelvic cavities); 2d, protracted and tedious manipulations in separating the uterus, applying ligatures and sutures; 3d, the necessity of lifting out from the abdominal cavity more or less of the intestinal tract, a procedure whose eminently deleterious effects on the action of the heart and lungs have recently been demonstrated again by Gutsch (on Shock, 1878). Therefore, a thorough and careful examination of all organs before undertaking such a serious operation as hysterotomy is of great importance. As regards the technics of hysterotomy, Br. warmly advocates the strict obedience to antiseptic principles. He discards, however, the use of the spray, as being a great annoyance to the operator in protracted operations; at the same time he also apprehends some irritating influence on the circulation. Br. opposes ligature *en masse*, as being unsafe. Kock's modification of first separating the uterus from bladder and rectum was once resorted to when both ureters were caught into the ligature. Br., therefore, advocates the old method of ligating each vessel as soon as it comes under the knife. In concluding, Br. gives it as his opinion that hysterotomy, as devised by Freund, though very creditable to the genius of its inventor, will be confined to very few cases, the more so since in case of carcinoma it affords but temporary relief.

H. B.

24. B. CRÉDÉ (Dresden): A NEW METHOD OF EXTIRPATING THE ENTIRE UTERUS (*Arch. f. Gynæk.*, XIV., 3).—The principal features of this new method are: 1st, resection of a part of the anterior wall of the pelvic cavity. To this end, the knife is carried downwards from the upper margin of the symphysis to the clitoris, all tissues being cut through at once down to the bone. The bladder is detached from the pelvis, and the oss. pubdenuded of periosteum with a sharp raspator. As soon as the ram. horiz. oss. pub. is reached, the saw is carried through the foram. obtur., around the ram. horiz. oss. pub. Both ram. hor. oss. pub. being severed, the saw is brought around the symphysis in such a way that its ends come out on both sides through the anterior lower angle of the foram. obtur. Thus the bone is sawed through in a transverse direction, the arcus pubis only remaining as a 1 cm. wide bridge to keep the ram. desc. oss. pub. in position. C. claims that this operation is entirely safe and almost bloodless. Eight days after its performance he proceeds to: 2d, the removal of the uterus. The abdomen being opened through the linea alba, the uterus is pierced and drawn out by means of a string; art.

sperm. ligated on both ends; ovaries and tubes are ligated in such a way that they can be cut off in connection with the uterus. A catheter then being introduced into the bladder, the peritoneum around the base of the uterus is divided, and with the blunt handle of the knife detached down to the laquear. Art. uter. and vena uter. are to be ligated separately. Finally, a catheter being used as conductor from the vagina, the laquear is cut through from the pelvis. In compliance with antiseptic principles, the wound is thoroughly washed, a carbolized sponge introduced into the vagina, and the abdominal wound closed by sutures. The patient having so far recovered from the shock of the operation, the sponge is removed from the vagina, and while the wound is kept open with vaginal holders, its edges are seized with hooks, drawn down into the vagina, and united by means of three to five sutures; thus is formed a kind of a cone, protruding into the vagina.

C. claims the following advantages for his operation: 1st, it allows of examining the entire pelvic cavity much better than is the case in Freund's operation: 2d, ligature *en masse* (after Freund) is substituted by the more safe and reliable mode of separately tying the vessels. H. B.

25. LIEBMANN: ON THE PERFORATION OF THE WALLS OF THE UTERUS BY THE SOUND. (*From the Italian by Dr. SIEGFRIED HAHN, 8vo, pp. 39. Berlin: Denicke, 1879.*)—Dr. Carl Liebmann, of Trieste, gives two cases in which he accidentally perforated the walls of the uterus with the sound, without having employed particular force; the instrument, in fact, passing with extraordinary facility. There was hardly any pain, and no ill-effects following the accident. The author, therefore, experimented on one hundred fresh cadavers, and found that the walls were perforated: very easily, in 23 cases; easily, in 42 cases; 11 cases seemed to offer a normal resistance, although perforation could be effected at the first trial, by using some force; 24 cases could only be perforated by repeated forcible trials. Of the latter, the uterus was normal 13 times; enlarged in consequence of chronic metritis, 11 times. Some of these showed rather thick and very rigid walls. The age of the subjects did not seem to have any particular influence on the perforability; but, in general, the uterus of those having long passed the menopause was more easily torn. In none of the one hundred experiments was senile atrophy of the uterus pronounced. *Sims' flexible sound was able to perforate all but the more rigid walls.* In 78 of the cases, it was the fundus that was perforated, in the neighborhood of the tubes, where it is thinnest.

After reviewing, under different heads, the observations of previous authorities, the author draws the following deductions. 1. Before sounding, ascertain, by bimanual examination or per rectum, volume and shape of the uterus, for in this manner the length of the cavity may be approximatively determined. Thus the instrument will traverse a known course, and, arrived at a certain depth corresponding to the approximate length of the cavity, caution should be increased. 2. In flexions, do not lift the uterus with the sound, unless previously convinced that it may be replaced by the hand in the vaginal vault. 3. Shortly after parturition or abortion—even after some months if the patient is greatly reduced, or low from some puerperal affection, and a condition of subinvolution or atrophy of the uterus may be suspected—do not resort to the metallic sound, but to elastic or wax bougies. A different course is indicated in

uterine myomata, and where any other intrauterine neoplasm may be suspected. So also in all individuals presenting the symptoms of advanced marasmus, whether in consequence of pulmonary phthisis or other wasting diseases, or also in advanced age. 4. Never introduce the sound when the mobility of the uterus is limited. *Recapitulation*.—1. Perforation of the uterus by the sound is not as rare an occurrence as is generally believed. 2. There are many diseases, and especially alterations of the uterine walls, which render the uterus prone to laceration, and predispose it to be easily perforated by the sound. 3. Some metamorphoses of the uterine walls, which likewise cause this lacerability, owe their origin to general conditions. 4. Relatively healthy uteri which are fixed by manifold adhesions in the pelvis are easily perforated by the sound. 5. The perforation of the uterine walls is not always free from danger. *

26. HAUSSMANN: ON THE BEHAVIOR OF THE SPERMATOOZOA IN THE FEMALE GENITAL ORGANS. (*Berlin, Aug. Hirschwald, 8vo, pp. 54.*)—The author gives a brief history of the varying views held by different observers as to the action of vaginal, cervical, and uterine secretions on the motility of spermatozoa, with copious references to the sources where these views and observations are recorded. He himself has made a study of the subject for a number of years, and admits that, as its systematic examination is surrounded with great difficulties, he can do no more than give the fundamental principles governing the behavior of spermatozoa in the female organs of generation, and throw some fresh light on the causes of sterility in both sexes. After explaining the precautions adopted in order to secure reliable data, he vouches for the truth of the statements advanced.

a. Behavior of spermatozoa in the vagina. Spermatozoa in the vagina, unless menstruation set in in the mean time, lose their motility, at the latest, in twelve hours; but, in the great majority of instances, this occurs much sooner, at times shortly after their intromission into the female genital organs. His observations do not permit him to decide in how far the subsequent formation of vaginal and efflux of uterine secretions, or the alternate moistening of the male urethra, may act modifyingly on the motile capacity of the individual spermatozoa. He can by no means confirm Beigel's statement as to the motility of spermatozoa for several days in the vagina. In three cases, thirty-six hours after cohabitation, spermatozoa could no longer be demonstrated in the vaginal mucus.

b. Behavior of spermatozoa in the uterus. Moving spermatozoa were found in the cervical mucus from $1\frac{1}{2}$ hours to $7\frac{1}{2}$ days after the last cohabitation. Deduction—a woman whose uterine mucus contains moving spermatozoa must have cohabited at the latest $7\frac{1}{2}$ (according to Percy, $8\frac{1}{2}$) days ago; if at the same time the vaginal mucus contains some of these motile cells, that act must have taken place at most 36 hours ago. Negative results observed by the author $7\frac{1}{2}$ to 8 days after the last cohabitation prove that there is no absolute law regulating the remaining of spermatozoa in utero, but that it changes with varying conditions—the width of the external os, the quality of the uterine secretion, the mechanism and frequency of cohabitation.

The number of spermatozoa in the uterus is much smaller than that in the vagina, but differs in accordance with the form and position of the lips of the os, and the time elapsed since the last cohabitation, becoming

less as the interval of time lengthens. Only the minority of spermatozoa injected reach the cavity of the uterus. In his investigations the author also noticed some deviations from the normal in spermatozoa, some being of surprisingly large size, some small with narrow cell-body, and some surrounded by a cellular mass like a collarette. They came from a man who six months before had been impotent for a space of three months, in consequence of some stomach affection. The author thinks it probable that diminutive spermatozoa, such as are found in early youth and extreme age, are incapable of producing impregnation, and recommends further investigations.

Owing to the elastic and changeable condition of the vagina, H. believes that the penis performs irregular motions:—*not* acting like a piston in a cylinder of parallel walls—that it ejaculates some semen directly into the os, and in cases of close adaptation, mechanically pushes the secretion into it. A direct contact of the orifice of the urethra and os uteri ordinarily does not occur, the penis as a rule being shorter than the vagina; but this is rendered unnecessary by the force with which the semen is ejaculated. If some semen has penetrated through the os externum into the cervical canal, the motility of some of the cells enables them sooner or later to reach the tube and finally the ovum. These occurrences suffer some modifications by an altered condition of the organs, such as a deviation of the normally wide lips of the os, or contraction of its orifice. That the lips of the os do not directly or indirectly suck up the semen is proved by impregnation having taken place after severe organic lesions and amputation of the lips.

The great majority of those spermatozoa which do not pass the os externum during coition lose their motility, either before they reach it by means of the string of mucus, or at least so early as to allow of their entering into the consideration for the fructification of the ovum only in the rarest instances if at all.

The theory that the semen is injected solely into the vagina or its vault, and that the spermatozoa reach the cervix by their individual motility, is disproved, 1st, by recent measurements (Sims), as they could not have traversed the necessary space in from four to eight minutes after intercourse; 2d, by the fact that H. found live spermatozoa in the uterus of women who used injections of sulphate of copper, resp. carbolic acid—chemicals which at once arrest their motions; 3d, that conception takes place even in cases of severe vaginal catarrh and also in cancer of the os.

Inasmuch as the semen remaining in the vagina does not promote impregnation (as proved by H.'s investigations), but soon perishes, its escape need not be feared, nor should attempts be made to retain it. But rest immediately after coition, already commended by the ancients, furthers the advance of the spermatozoa into the internal genital organs, and should not be discarded.

As to the use of neutralizing injections, H. doubts if they would not destroy the motility and fructifying capacity of the cells passing through the os. If the os is not too contracted, the spermatozoa will reach the uterine cavity, and in cases of flexion it is feasible to push the seminiferous secretion through the constricted place by a strong sound. An operation for the constriction would be justified if in the course of a week after repeated coitions no motile spermatozoa are found in the uterine mucus, and if we are positive that no other incurable cause of the sterility exists

beyond. As the sound injures the epithelium and perhaps, too, the spermatozoa, the author proposes first to try a Brown's syringe having a corresponding flexible canula; and, that failing, an instrument which he calls the spermaphore [spermatophore would be etymologically correct]—a thick flexible sound provided with two projecting round cross-pieces, 2 cm. below its button, as likely to carry the greatest possible amount of secretion with least irritation into the cavity of the uterus.

Sterility in uterine catarrh may be explained by the fact that the watery secretion carries the spermatozoa back again into the vagina. This theory is supported by a case of the author's, in which spermatozoa were found in the vagina later than usual, menstruation having occurred meantime. His observations also disprove the old theory that the womb closes after the intromission of semen.

The best time, then, to secure impregnation, would be sufficiently long before menstruation to enable the spermatozoa to reach the Fallopian tube, otherwise the flow would carry them back.

Carbolic acid, thymol, chlorine water, cuprous sulphate, destroy the motility of spermatozoa; but also other remedies used in gynecology act injuriously, such as sponge-tents and probably laminaria. H. never found motile spermatozoa in the vaginae of women wearing rubber rings, but as this may be due to the cleansing injections used by them, he attaches little importance to the fact. As to intrauterine stems, if their presence leaves room for even a trace of semen to enter the cervix, impregnation may follow. In the local treatment of female sterility, careful adaptation to existing conditions of the means to be employed is of paramount importance. *

PEDIATRICS.

27. ZIT: PSYCHICAL DISTURBANCES IN CHILDHOOD. JUVENILE INSANITY (*Cent. Zeit. f. Kindhkte.*, Nos. 8-12, 1879).—DR. JOS. ZIT (Prague) has an interesting article extending through five numbers of this journal, which I may condense about as follows:

“The psychical disturbances in children are hard to study, because of the undeveloped state of the brain. Just as the motor centres are undeveloped, and we are not surprised at errors of motions, so we do not notice mental errors until the child becomes a youth. The books, therefore, speak only of idiocy and slight the other forms of insanity, a great wrong, because skilful treatment of these may often ward off the other.” [Then follows a short review of the literature of the subject, and remarks on its importance.] “Statistics on the subject are hard to obtain, on account of the concealment practised by parents. Paulmier, in 1,000 cases of insanity, had 10 children; John Turnam, out of 21,333 cases, had 8 children under ten years, and 1,161 between ten and twenty years. Conolly states that boys and girls are equally affected, but cases of girls are more often concealed. The age when insanity is most frequently noticed, is from ten years on, but it often exists earlier than this. There have been cases published of insanity in children under three years of age, one by Greding in a babe of nine months. In general, we may say that the two most important periods are: first, when the children begin to attend school, and, second, puberty.

ETIOLOGY.—Among predisposing causes, inheritance stands first, then

the bringing up, education, especially forced instruction. Among physical causes, meningitis, acute or chronic, encephalitis, new growths, apoplexy, embolus, diseases of the skull, etc. Delasiauve mentions an interesting case of mania caused by larvæ of insects in the frontal sinuses. Wounds of the brain may cause disturbance of its functions, as also rarely hyperemia, and more often anemia, especially the anemia following a long sickness, like typhus. Pertussis deserves to be especially mentioned as a cause. The internal use of narcotics, especially the *extracts*, also of Santonin, chloral hydrate, and alcohol, is said to have produced insanity. Dr. Coynba states that onanism and pederasty are fruitful causes, but here we must be very careful not to confound effect or symptom with cause. The same may be said of epilepsy and chorea. Among other diseases which may be followed by insanity, I would mention as very important cardiac disease, especially mitral insufficiency, then pulmonary infiltration, and acute rheumatism. Psychological exciting causes are fright, fear, anger, etc. On looking over all these causes, we find that they all depend finally on a change in either the substance of the brain or its coverings.

CLASSIFICATION OF THE PSYCHOSES.—Divisions dependent on the amount and stage of brain lesion are impossible in children, since the disease is not of long enough duration to have reached the so-called secondary forms. We may, however, make a classification according to the external manifestation of the trouble, the *humor* of the patient. According to this principle, we make three varieties: first, in which the activity of the mind is increased, exalted; second, where it is decreased; and, third, where it is almost or wholly absent, null. This gives us, first, mania; second, melancholia; and, third, idiocy. In children, even more than in adults, we are apt to find combinations of these three varieties. But, besides these, we find a class of cases which cannot well be included in any of them. The mind of a child does not long retain an impression, and is incapable of logical reasoning, hence the rarity of hallucinations, illusions, or fixed ideas. Their feelings and inclinations, on the other hand, are strongly marked, and often in spite of the most careful discipline and care, they obtain such control over the child as to constitute a form of insanity. Considering this as the first variety, we shall be able to arrange our other cases under the forms of melancholia, mania, and idiocy.

This first form may be likened to the 'moral imbecility' of adults, and is frequently accompanied by one of the other forms. It is often difficult to diagnose it from the crossness and perverted inclinations of badly brought up and spoiled children, but usually there is present some other sign of brain disturbance. The body and outward appearance corroborate the old adage '*sana mens in corpore sano.*' The various parts of the body are apt to be abnormally developed, the cranium is either too large or too small, the temples sunken, the forehead small and low and arching forward, the back part of the head prolonged backward. The children are restless and unable to sit still or give attention to one object for any length of time. They seem to have no love for parents or brothers and sisters, and to be hard-hearted and cruel to those weaker than themselves. In school they are the plague of their teachers, and this because they are really unable to observe any regular order. Some one branch of education, such as music or drawing, often fastens their attention,

and in this they take great joy. Their sexual passions are early roused, and self-abuse is common. Kleptomania is often seen, and punishment is apt to bring on maniacal or epileptiform attacks. Such psychoses are often accompanied by other nervous disturbances, as hysteria, epilepsy, catalepsy, and somnambulism. Conolly describes such forms by saying that in them we find combined 'goodness of heart with ill-nature, a certain grade of intelligence with imbecility.' The arrival at puberty has great influence on this form of insanity. Treatment, which has before been of no avail, is then often of use, and, on the other hand, the insanity then often develops into so decided a form that an asylum is the only resort.

TREATMENT.—Parents often conceal or misconstrue this form of mental weakness. We must get a careful history of every case, what severe sicknesses the child has had, etc." [The author goes into a long argument as to whether or not the child should be kept at home, and decides that] "it should by no means be kept at home or sent into a school, but that, best of all, it should be placed among strangers, who would be kind and yet unyielding. An asylum will not do. The children know too well where they are. It is also important to separate such a case entirely, for a time, from other children. The family in charge must completely control the child, and yet do it kindly. Maniacal attacks are best overcome by putting the child quietly in a darkened room, and letting it rest, watching carefully that it does no harm. Their mental powers must not be strained. So far as possible they must be allowed to follow the bent of their inclinations, and have instruction in what most pleases them. General hygienic rules must be closely observed, and all complications carefully treated. By these means such psychoses may sometimes be cured.

We now come to those forms of insanity which are analogous to the melancholia and mania of adults, though in children it is only fair to use these names as expressing a lowered or exalted mental activity. Excitement is more common to children than depression, hence mania more common than melancholia. One form of the latter, however, has been quite frequently noticed, and has been named melancholia hypochondriaca. The name describes it. It occurs usually in children watched over by a too anxious mother, or where the other children in a family have been carried off by some disease and the child has great dread of it. A true insanity and dread of disease must be diagnosed from the ill-nature of children, who find out that by simulating disease they can obtain what they will from their parents. The fact that there are many children of the latter sort must not make us overlook true cases of hypochondriaca, which too often is really the beginning of some fatal trouble." [Some interesting cases given.] "True melancholia is seldom seen in children. It differs from melancholia in adults principally in the fact that it is not often of long duration, but either ceases altogether after a time, or shows intermissions.

"Mania is much more frequent. The children act strangely, their movements are irregular, they run hither and thither, destroy everything that comes in their way, and strike at every one near them. Such an attack often lasts a long time before the child is tired out. Consciousness is disturbed or not, according to whether the insanity is complicated with any other disease or not. Most of Paulmier's cases ended favor-

ably. Such a disturbance, however, leaves behind it an irritable, excitable temperament, which may easily be roused to relapses, and too often later years find such children in asylums. The symptoms of an approaching attack are as follows: The children are sometimes very sad, sometimes hilarious and active, and this without any cause. They cannot be kept at any task, either because they have no power to work, or because they cannot keep long enough at one thing. Sometimes such symptoms are followed by convulsions. This is a bad prognostic sign. The treatment in such cases is similar to that mentioned above.

There remain those rare cases in which children suffer from what may be termed 'insane fixed ideas,' such as fear of certain persons or things. Such ideas are often premonitory symptoms of approaching brain disease (tubercular meningitis), and prognosis must be careful.

I will not speak of idiocy, because it is fully treated of in several works."

[To appreciate fully the author's work, it is necessary to read the reports of cases, but it is impossible to reproduce them here.] J. F.

28. BAGINSKY: INFECTIOUS PERIOSTITIS AND OSTEOMYELITIS (*Cent. Zeitzg. f. Kindhlkde*, 15 Juni, 1879).—DR. BENNO BAGINSKY (Berlin) reports a case of the above, which is interesting on account of its acute course, and as bearing on the much discussed question of etiology in this disease.

On Dec. 12th, 7 A.M., he was called to see a boy, six years old, who had been perfectly well up to the afternoon before. He had then complained of a pain in his right foot, which had come on suddenly, and from no injury or known cause. In the evening, fever set in, through the night the pain increased, sleep was impossible for the boy, and he became very restless.

Dr. B. found a fine, well-formed boy, of healthy parentage, with absolutely no suspicion of rachitis or scrofula, lying in bed partially unconscious, with burning skin, pulse 140° and full, and tongue coated but moist. On examination, found lungs, heart, and abdominal organs all normal. The right thigh was rotated outward, flexed, and abducted. The whole thigh swollen, not edematous, not red. Pressure on its anterior surface, especially from the middle downward, caused intense pain. Right knee-joint was also swollen, especially about the int. condyle. When the boy was taken out of bed and placed upright, the thigh was rotated inward, flexed and abducted. There was no fluctuation and no swelling of the inguinal glands.

Examination showed the hip-joint to be entirely free from disease, and from all the symptoms a diagnosis was made of acute infectious periostitis and osteomyelitis of right femur.

At 8:30 A.M., same day, the temperature was 40.8° (105.3° F.). Half an hour before this, there had been a convulsion. This was repeated three times in the course of the day. Ordered leeches and ice-bags on the limb and head, and inunctions of unguentum hydrarg.

At 6 P.M., pulse 160°, respiration stertorous, consciousness diminished. Ordered leeches. The coma increased, and at 2 o'clock in the night the boy died.

The autopsy showed the right thigh swollen, so as to measure 1 cm. more than the other around the middle, and 1½ cm. more around the knee. Skin normal; muscles normal. On cutting through the periosteum, at the nutritive foramen, there exuded about 3 ij. of thick, yellow,

creamy pus. The periosteum was separated from the bone, thickened, and purple from injection. The surface of the bone at this point was smooth and not discolored. From here down to the knee the periosteum was thickened, injected, and easily detached from the bone. On the internal condyle was a distinct spot of caries, the bone being rough, as if gnawed out. The caries extended from the int. condyle about 2 cm. on the ant. surface of the epiphysis, close to the epiphysal cartilage, which latter appeared normal. Hip-joint was normal. Interior of knee-joint ditto. Arteria and vena cruralis normal. Examination of internal periosteum and marrow showed no change except a slight reddening; no purulent infiltration.

From the autopsy we see that the case was one of primary periostitis (which from its course might fairly be called infectious), and caries of the lower end of the femur. We see, also, that the marrow was very slightly affected. No proximate cause for the sudden attack could be ascertained. All injury was out of question. The spasms which the boy had Dr. B. thinks were chills. He is inclined to believe the disease to be at first a purely local affection, and that the constitutional symptoms follow absorption. Wolff likens such cases to spontaneous pyemia. Dr. B. remarks that, if this view is correct, the indication for treatment is early incision or amputation.

J. F.

29. FROEBELIUS: CONJUNCTIVITIS NEONATORUM IN THE FOUNDLING ASYLUM OF ST. PETERSBURG. (*Cent. Zeitg. f. Kindhlkde.*, 15 Juli, 1879.)—DR. W. FROEBELIUS gives interesting tables to disprove the statements so often found in ophthalmological works, that foundling asylums are hot-beds for inflammations of the eye, etc., and especially Prof. Arit's statement that the above "occurs very much more frequently within such institutions than without them, and runs a very much severer and more destructive course."

Having himself undertaken the careful examination of every child admitted to the above institution, he proves that from seventy to eighty per cent of the cases exist at the admission of the patients, and these children at St. Petersburg are not brought in from hospitals, lying-in wards, but from the city at large. He admits that, when they had to treat large numbers of cases in the same rooms devoted to this purpose, they had poor results, but now that they treat them where they happen to be, throughout the house, the results compare favorably with any obtained outside. He also shows by statistics that the destruction of the deeper parts is much more frequent in cases admitted with the disease than in those attacked in the house. By other tables he shows that these cases occur by far most frequently in children admitted at more advanced age (from two weeks on), and he calls attention to the fact that many cases come to his clinic with the story of the mother that the child's eyes became sore when it was young, and that the midwife said it was a matter of no consequence, and would soon pass over.

[This is a matter in which midwives need instruction and overseeing as much in New York as in St. Petersburg.]

J. F.

30. GENSER: OINTMENT OF SALICYLIC ACID IN ECZEMA, ETC. (*Cent. Zeitg. f. Kindhlkde.*, 1 Juli, 1879.)—DR. THEODOR VON GENSER, assistant physician at the Vienna Foundling Asylum, and therefore in a position to thoroughly try a remedy of this kind, writes as follows: "The most frequent and troublesome skin disease among small children is the

moist and oozing eczema, which appears chiefly on the face and head. Without discussing the question whether it is a local or a constitutional disease, but simply stating that we in Vienna consider Hebra's opinions as the direct guide for treatment. I may say at once that the local means used are by far the most important, if not in all cases the only ones. The great number of local remedies which have been proposed serve only to show that none of them succeed in all cases. Salicylic acid has perhaps latest come upon the scene (s. Fleischmann, *Oest. Jahrb. f. Pädiatr.*, 1877, II.), and has now been used in this institution for two years.

The results of our observations may be shortly stated: Treatment with ointment of s. acid is eminently successful in cases of *moist* eczema. The diseased regions treated by it quickly dry up; the skin, at first deeply reddened, repeatedly scales off, and becomes thereby paler and paler until it is restored *ad integrum*. We have never seen evil results. Immediately after its application, the salve causes more or less burning, and the children cry a little, but this soon ceases. Of course, we must not expect too much from the salve. It does not prevent the formation of new vesicles on the periphery, that is, the extension of the eczema. Some cases are extremely obstinate in yielding to it; can, however, be perfectly cured by it without internal remedies.

The ointment is of less value in the dry, scaly form of eczema (*squamosa*), which so often occurs in children's faces. Here we have to fall back on the tar.

In intertrigo the ointment has given good results.

We have also used it in cases of dermatitis exfoliativa. In his excellent monograph on this disease (abstract published in this JOURNAL for October, '78), Prof. Ritter states that sometimes the denuded corium is moist and oozing and sometimes dry. It is in the first form that the salicylic salve has proved of great benefit.

We have also had excellent results in treating cracked and excoriated nipples with it. As to the formula of the salve, numerous and careful trials have confirmed us in the use of a 4-per-cent strength. R. Acid, salicyl., 2.0; solve in pauc. alc. rectifdss.; Ung. emoll. (spl.), 50.0. M. ft. ung.; when possible, apply on lint. When this cannot be done, it is to be rubbed in several times a day. We have tried stronger percentages, but they are apt to irritate. In dermatitis exfoliativa we have used even weaker ones—3-2 per cent." J. F.

31. BARY: ACUTE EDEMA GLOTTIDIS AS FIRST SYMPTOM OF NEPHRITIS SCARLATINOSA. (*Cent. Zeit. f. Kindhikde.*, 1st Juli, '79.)—DR. J. M. BARY (Frankfort on M.) increases our interest in the case he details by quoting from Rauchfuss his statement in Gerhardt's book, of the extreme rarity of the above in children. Three cases only are recorded in which the glottis edema was the first symptom, while in this case it was not only the first, but also the only sign of edematous exudation.

"The girl, $3\frac{1}{4}$ years old, was brought to the hospital on Feb. 24th with the request, from her physician, that preparations be made for tracheotomy. The physician stated that patient had had a mild attack of scarlatina in the middle of January, but had been seen by him on Feb. 22d well and bright. On the 24th, at 3 P.M., being suddenly called, he found the child, without her having had any preceding cough or any malaise, with all the symptoms of laryngostenosis and with slight redness of the

throat. About five hours afterward, I saw the case. I found her sitting up in the bed, the dyspnea still great, but, according to the nurse, not so great as on admission; sharp, loud respiration, and a temperature of 39.4 (103° F.). Examination of the whole body showed nothing but redness of the throat and râles in both lungs. Tracheotomy not seeming to me necessary, I continued the treatment already begun, ice on the neck, inhalation of steam, and internally chlorate of potash.

At 11 P.M. the temp. was 39.8 (103.6° F.); at 3 A.M. Feb. 25th, 37.0 (98.6° F.). The breathing was then freer and the child slept for some hours. At 9 A.M. she breathed quietly also when awake, but in speaking or crying the voice was hoarse.

The scarcity and the dirty greenish color of the urine were very striking. Examination showed a large amount of albumen. Ordered infus. digitalis. In the course of the day, there were two attacks of dyspnea without the characteristic tone of stenosis. Evening temp. 39.2 (102.8° F.).

The night was passed quietly, and during the 26th the urine was more plentiful, respiration a little frequent, no cough or hoarseness. Ordered with infus. digitalis, tinct. ferri acetic. Evening temp. normal.

From the 27th on, the urine increased, and the albumen decreased till it disappeared entirely by March 2d. Patient seemed perfectly well, though pale. March 5th she left her bed. There was even when she walked no sign of edema in any part of her body. March 10th she went home. The iron was continued, and she has remained perfectly well.

It is impossible that the case should be any other than we have named it, although the appearance of the urine made us think of carbolic acid poisoning. Careful examination showed that this was not the case, and, at all events, that would not have accounted for the sudden stenosis. There is no doubt it was one of the rare cases named in my title."

J. F.

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